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Chen-Northern, inc  
Hazardous Mine  
Opening Project,  
Phase 22,  
Beaverhead County,  
Montana, Mont. A/E  
88-46-110

# Chen Northern, Inc.

## FINAL REPORT

HAZARDOUS MINE OPENING PROJECT, PHASE 22  
BEAVERHEAD COUNTY, MONTANA  
Mont. A/E 88-46-110

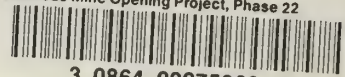
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BEAVERHEAD COUNTY, MONTANA  
Mont. A/E 88-46-110



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FINAL REPORT  
HAZARDOUS MINE OPENING PROJECT PHASE 22  
BEAVERHEAD COUNTY, MONTANA  
Mont. A/E 88-46-110

Prepared for:

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Department of State Lands  
Abandoned Mine Reclamation Bureau  
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Prepared by:

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November 4, 1989



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## I. INTRODUCTION

### 1.1 OVERVIEW

Hard rock mining has taken place in Montana since 1862 and was essentially unregulated from a reclamation standpoint for over one hundred years. This resulted in thousands of hazardous shafts and adits in mining districts across the state. The hazards associated with these mine openings are many and range from bad air to falling rock and cave-ins.

### 1.2 PROJECT OBJECTIVES

The Phase 22 Hazardous Mine Opening Project was designed and executed with the intent of eliminating accidental or unauthorized exposure to hazards existing at a number of abandoned hard rock mines in Beaverhead County.

Backfilling was the preferred reclamation option for closing hazardous adits and shafts but alternative methods (eg. bulkheads, fencing) were utilized at the owners request.

### 1.3 PROJECT LOCATION

This project included approximately 200 openings at 118 sites located in seven mining districts in Beaverhead County, Montana. Legal descriptions are listed in Table 1 and site locations are shown on the vicinity maps in Appendix A.

### 1.4 HISTORY

Mining in Montana began in the early 1860's with several years of placer mining preceding the discovery of lead deposits in most districts. The levels of mining activity fluctuated until 1905 when many of the mines were abandoned. Present activity includes limited mining and exploration.

Beaverhead County has a recorded gold production of about 370,000 ounces through 1959, but early production records are incomplete and total output may be considerably larger. A brief history on the individual districts included in the Phase 22 Hazardous Mine Opening Project follows.

ARGENTA MINING DISTRICT - The Argenta District is the second oldest quartz camp in Montana. It is situated at the mouth of Rattlesnake Creek, twelve miles northwest of Dillon. Silver ore from the Argenta district was originally shipped to Swansea, Wales for smelting but in 1865 the first Montana smelter was erected in Argenta. The total recorded production from the Argenta District is estimated at \$1,500,000, mostly from lead, silver and gold.



TABLE 1

## PHASE 22 PROJECT LOCATIONS

PA #	COUNTY	DISTRICT	SITE NAME	LEGAL DESCRIPTION
01-125	Beaverhead	Argenta	Albers Spring	T06S R10W S22 NE NW
01-121	Beaverhead	Argenta	Amaranth	T06S R10W S30 SE NW
01-014	Beaverhead	Argenta	Cold Day	T06S R10W S29 NW
01-109	Beaverhead	Argenta	Dexter	T06S R10W S17 NW NW
01-123	Beaverhead	Argenta	Dexter Gulch	T06S R10W S17 SE NW
01-127	Beaverhead	Argenta	Ferdinand	T06S R10W S29 NW SE
01-191	Beaverhead	Argenta	Florence	T06S R11W S24 NE NW
01-100	Beaverhead	Argenta	Gold Finch	T06S R11W S13 SW NW
01-108	Beaverhead	Argenta	Golden Era	T06S R11W S13 NE NE
01-124	Beaverhead	Argenta	Good Friday Gulch	T06S R10W S16 SE SW
01-022	Beaverhead	Argenta	Goodview	T06S R10W S18 SW SW
01-174	Beaverhead	Argenta	Humbolt Mountain	T05S R10W S19 SW NE
01-120	Beaverhead	Argenta	Long John Gulch	T05S R10W S34 SW NW
01-119	Beaverhead	Argenta	Madison	T06S R10W S13 NW SW
01-129	Beaverhead	Argenta	May Day	T06S R10W S07 SW SE
01-117	Beaverhead	Argenta	NE Section 24	T06S R11W S24 SE NE
01-189	Beaverhead	Argenta	NW Section 29	T06S R10W S29 NE NW
01-099	Beaverhead	Argenta	Pilon Ranch	T06S R11W S22 SW SE
01-126	Beaverhead	Argenta	Rosemont	T06S R10W S08 SW SE
01-175	Beaverhead	Argenta	SE Section 21	T06S R11W S21 NW SE
01-128	Beaverhead	Argenta	SW Section 8	T06S R10W S08 NW SW
01-107	Beaverhead	Argenta	Silver Rule	T06S R11W S16 NE NE
01-130	Beaverhead	Argenta	Starlight	T06S R11W S24 NE SE
01-105	Beaverhead	Argenta	Stinson	T06S R11W S14 SW NW
01-131	Beaverhead	Argenta	Storm King	T06S R11W S13 SW SE
01-122	Beaverhead	Argenta	White Lime	T06S R10W S17 SE NE
01-091	Beaverhead	Baldy Mountain	Baldy #4	T06S R12W S11 SW NE
01-088	Beaverhead	Baldy Mountain	Cable	T06S R12W S24 SW SW
01-054	Beaverhead	Baldy Mountain	Dillon	T06S R12W S23 SW NE
01-089	Beaverhead	Baldy Mountain	Driscoll Creek	T06S R12W S09 SW SW
01-087	Beaverhead	Baldy Mountain	Durham Bull	T06S R12W S23 NE SE
01-096	Beaverhead	Baldy Mountain	Grizzly Bear	T06S R12W S22 NW NE
01-090	Beaverhead	Baldy Mountain	Steel Creek	T06S R12W S08 NE NW
01-093	Beaverhead	Baldy Mountain	West Fork	T06S R12W S14 SW SW
01-177	Beaverhead	Baldy Mountain	Wild Bat	T06S R12W S14 NE SW
01-056	Beaverhead	Bannack	Bannack State Park	T08S R11W S06 S
01-068	Beaverhead	Bannack	Bon Accord	T08S R11W S16 NE NW
01-058	Beaverhead	Bannack	Box X	T08S R11W S09 SE SW
01-062	Beaverhead	Bannack	Excelsior	T08S R11W S08 NE SW
01-063	Beaverhead	Bannack	French	T08S R11W S08 SW SW
01-066	Beaverhead	Bannack	Golden Leaf	T08S R11W S07 SE NE
01-061	Beaverhead	Bannack	Golden Ledge	T08S R11W S08 NW NE
01-057	Beaverhead	Bannack	Hendricks	T08S R11W S07 SW NE
01-059	Beaverhead	Bannack	SW Section 5	T08S R11W S05 SW
01-064	Beaverhead	Bannack	Wacam	T08S R11W S07 NE SE
01-065	Beaverhead	Bannack	Wallace	T08S R11W S07 SE NE
01-138	Beaverhead	Blacktail/Ruby	Ground Hog	T08S R07W S30 SE SW





TABLE 1 (continued)

PA #	COUNTY	DISTRICT	SITE NAME	LEGAL DESCRIPTION
01-106	Beaverhead	Blacktail/Ruby	NW Section 24	T08S R08W S24 NW NW
01-135	Beaverhead	Blacktail/Ruby	Nevada	T09S R08W S21 SW NE
01-008	Beaverhead	Blacktail/Ruby	Smith Dillon	T08S R08W S23 NW SE
29-091	Beaverhead	Blacktail/Ruby	Stone Creek	T07S R06W S21 NW SE
01-075	Beaverhead	Blue Wing	Arctic	T07S R11W S20 NE SE
01-038	Beaverhead	Blue Wing	Bob Ingersoll	T08S R11W S04 NW NE
01-071	Beaverhead	Blue Wing	Cottontail	T07S R11W S33 NE NE
01-074	Beaverhead	Blue Wing	Francis H.	T07S R11W S28 SW NW
01-040	Beaverhead	Blue Wing	Hangmans Gulch	T07S R11W S32 SW NE
01-085	Beaverhead	Blue Wing	Huron	T07S R11W S28 W SE
01-070	Beaverhead	Blue Wing	Iron Mask	T07S R11W S27 SW SW
01-069	Beaverhead	Blue Wing	Kent	T07S R11W S33 NW NE
01-080	Beaverhead	Blue Wing	Log Cabin	T07S R11W S33 SE SE
01-076	Beaverhead	Blue Wing	NW Section 28	T07S R11W S28 NW NW
01-082	Beaverhead	Blue Wing	Nettle	T07S R11W S33 SE NW
01-178	Beaverhead	Blue Wing	New Departure	T07S R11W S26 NW
01-079	Beaverhead	Blue Wing	Old Charter Oak	T08S R11W S04 SE NW
01-013	Beaverhead	Blue Wing	Silver Buckle	T07S R11W S28 NW NW
01-078	Beaverhead	Blue Wing	South Oak	T08S R11W S04 NE SW
01-073	Beaverhead	Blue Wing	Wheal Rose	T07S R11W S27 NE SW
01-136	Beaverhead	Clark Canyon	Clark Canyon	T10S R11W S01 NE NW
01-110	Beaverhead	Ermont	Badger	T06S R11W S26 SE SE
01-114	Beaverhead	Ermont	East Ermont	T06S R11W S35 SE NE
01-005	Beaverhead	Ermont	Ermont Mill	T06S R11W S35 NW SE
01-112	Beaverhead	Ermont	Ermont No. 19	T06S R11W S35 N NE
01-111	Beaverhead	Ermont	Opy	T07S R11W S11 NE NW
01-194	Beaverhead	Ermont	South Ermont	T07S R11W S02 NW NW
01-134	Beaverhead	Polaris	Silver King	T05S R12W S28 SW SE





BALDY MOUNTAIN MINING DISTRICT - The Baldy Mountain district is at the south end of the Pioneer Mountains and occupies an area between Taylor and Grasshopper Creeks, 27 miles west of Dillon. Placer mining began in 1869 and lode mining soon after. Prior to 1885, moderate amounts of silver ore was produced but since then production has been sporadic.

BANNACK MINING DISTRICT - Bannack is the oldest quartz camp and was the first territorial capitol of Montana. It is located 20 miles southwest of Dillon and is situated along Grasshopper Creek. The district is best known for its rich placer deposits which were discovered in 1862 and continue to be mined.

BLACKTAIL/RUBY MINING DISTRICT - The Blacktail district is located at the head of Sheep Canyon, a tributary to Blacktail Deer Creek, in the Ruby Mountains, 15 miles south of Dillon. The SMITH-DILLON mine began talc production by open pit methods in 1942. Production was primarily steatite grade which is the purest form of commercial talc varieties.

BLUE WING MINING DISTRICT - The Blue Wing district was discovered in 1864 and has been worked intermittently on a small scale since that time. The district is located 15 miles west of Dillon and is bordered by Badger Pass on the north and the Bannack mining district on the south. It is estimated that the district produced metals of a gross value of \$200,000 within the first 10 years of its discovery. Ore was shipped to Argenta smelters during the early period.

CLARK CANYON MINING DISTRICT - Historical information and production figures are not available for the Clark Canyon mining district.

ERMONT MINING DISTRICT - The Ermont mines were located in 1926 and produced from 1932 to 1942. In 1936, a 100 ton cyanide mill was erected which refined an average of 90 tons of ore every twenty-four hours. The mill ran three shifts and employed 60 men. During this period, the monthly output was \$22,000.

POLARIS MINING DISTRICT - The Polaris district is located on the west slope of Baldy Mountain about 20 miles north of Bannack. In 1907, a 100 ton smelter was built to process ores which were valued for their silver content.

## 1.5 SITE DESCRIPTION AND PROBLEMS

The sites included in this project are located in or near residential areas, historic sites, close to public roads or in recreation areas. All mine openings threatened public safety. The shafts involved were deep enough to prevent unaided escape upon entry. Adits were obstructed or fitted with accessing bulkheads to protect the curious from unsuspected dangers.



## 2.0 DESCRIPTION OF PROJECT RECLAMATION

### 2.1 PROJECT PLANNING

Backfill was recommended for all mine openings to permanently eliminate the hazardous mine openings. However, many landowners refused to allow backfill and accessing bulkheads or fencing were installed. These alternative methods do accomplish the goals of preventing accidental entry but are semi-permanent in nature and are subject to vandalism.

Steel grate systems used as shaft closures were fabricated by an independent contractor; Lewis D. Morris, 1814 Wilder, Helena, MT. The grates were available for transport to Phase 22 Project sites at the start of the project. This arrangement resulted in cost savings and eliminated the need for additional contract time (which would have been necessary if grate fabrication was the responsibility of the construction contractor). The following is a list of grate sizes, fabrication costs, and prices per square foot.

<u>Size</u>	<u>Cost</u>	<u>Price/Sq.Ft.</u>
6 x 6	155.00	4.31
10 x 10	430.00	4.30
16 x 16	1050.00	4.10
16 x 24	1586.00	4.13
24 x 24	2350.00	4.08
16 x 32	2250.00	4.40
24 x 32	3456.00	4.50
32 x 36	5280.00	4.58

### 2.2 CHRONOLOGICAL HISTORY

Pre-Bid Conference	July 29, 1988
Bid Opening	August 9, 1988
Contract Award	August 16, 1988
Contract Awarded To:	

Coleman Construction  
2600 Webster Lane  
Dillon, MT 59725

Pre-Construction Meeting	August 25, 1988
Notice to Proceed	August 26, 1988
Began Work	August 29, 1988
Winter Shutdown	November 26, 1988
Spring Start-up	May 1, 1989
Project Completed	June 20, 1989



## 2.3 EQUIPMENT

CAT 225 Hydraulic Excavator (track mounted)  
CAT 950 Loader  
CASE 580 B Backhoe

## 2.4 CONSTRUCTION OPERATIONS

The contractor performed the following:

1. Backfilled 71 mine openings (6646 c.y.)
2. Installed 48 culverts with locking hatches
3. Installed 48 steel grate systems
4. Erected 4966.5 L.F. of farm fence at 26 locations
5. Installed 54 "Danger Mine Shaft" signs
6. Installed six cable net barriers
7. Installed two masonry adit doors
8. Blasted and collapsed 14 mine openings
9. Revegetated all areas disturbed by construction activities





### 3.0 COST SUMMARY

#### 3.1 Final Payment Request

A copy of the Final Payment Request is contained in Appendix B. That document contains the final quantities and costs for each work item.

#### 3.2 Change Orders

Eight Change Orders and five Work Directive Changes were executed during the Phase 22 construction period for a total net change in contract price of (+) \$103,215.30 which represents 32% of the project total. Copies of the Change Orders and Work Directives are also included in Appendix B.

#### 3.3 Cost Per District

Table 2 details the work performed (with measured quantities) for each mine opening included in the Phase 22 Project. Below are the totals for each Mining District and the Completed Project.

Argenta Mining District	\$ 90,713.00
Baldy Mountain Mining District	\$ 15,850.00
Bannack Mining District	\$ 32,570.00
Blacktail/Ruby Mining District	\$ 11,080.00
Blue Wing Mining District	\$ 156,852.30
Clark Canyon Mining District	\$ 9,225.00
Ermont Mining District	\$ 38,972.00
Polaris Mining District	\$ 13,130.00
 Mobilization	 \$ 8000.00
Miscellaneous Site Work	\$ 2600.00
	-----
Phase 22 Project Total	\$ 378,992.30

#### 3.4 PROFESSIONAL SERVICE FEES

Services provided by Chen-Northern, Inc. include landowner consent, budget preparation, grant application, weed board approval, basic engineering, construction staking, construction contract administration, quantity accounting and full time resident inspection. The project included 118 sites in Beaverhead County resulting in extensive travel time. Construction activities were performed during two construction seasons. An analysis of these fees in relation to the Total Project Cost is included as Figure 1.





**TABLE 2**  
**PHASE 22 QUANTITIES AND COSTS**

DISTRICT	SITE	#	SPECIFIED	CONSTRUCTED	C.Y.	L.F.	SIGNS	COST
Argenta	Albers Gulch	1	Backfill	Backfill	25			250.00
Argenta	Amaranth	2	Grate	Grate				3760.00
Argenta	Cold Day	3	Backfill	Backfill	73.5			735.00
Argenta	Dexter	4	Backfill	Backfill	322			3220.00
Argenta	Dexter	5	Grate	Grate				5060.00
Argenta	Dexter Gulch	6	Backfill	Backfill	28			280.00
Argenta	Ferdinand	7	Backfill	Grate				3140.00
Argenta	Florence	8	Backfill	Backfill	21			210.00
Argenta	Gold Finch	9	Grate	Grate				5060.00
Argenta	Gold Finch	9A	-	Fence		116	2	640.00
Argenta	Gold Finch	10	Grate	Grate				3760.00
Argenta	Golden Era	11	Grate	Grate				3760.00
Argenta	Good Friday Gulch	16	Backfill	Backfill	220.5			2205.00
Argenta	Good Friday Gulch	17	Backfill	Backfill	70			700.00
Argenta	Goodview	12	Grate	Grate				3760.00
Argenta	Goodview	13	Backfill	Backfill	38			380.00
Argenta	Goodview	14	Backfill	Backfill	23			230.00
Argenta	Goodview	14	Cable Net	Culvert				1500.00
Argenta	Goodview	15	Backfill	Backfill	70			700.00
Argenta	Humbolt Mountain	18	Grate	-				
Argenta	Humbolt Mountain	19	Culvert	Culvert				1500.00
Argenta	Long John Gulch	20	Cable Net	Backfill	37			370.00
Argenta	Long John Gulch	21	Cable Net	Backfill	47			470.00
Argenta	Long John Gulch	21A	-	Backfill	23			230.00
Argenta	Madison	22	Grate	Grate				3760.00
Argenta	Madison	23	Grate	Grate				4296.00
Argenta	Madison	23A	-	Fence		92	1	490.00
Argenta	May Day	24	Backfill	Backfill	49			490.00
Argenta	May Day	25	Backfill	Backfill	93			930.00
Argenta	NE Section 24	26	Grate	Grate				3760.00
Argenta	NE Section 24	27	Grate	-				
Argenta	NW Section 29	28	Backfill	Backfill	87.5			875.00
Argenta	NW Section 29	28A	-	Backfill	99			990.00
Argenta	Pilon Ranch	29	Grate	Grate				3760.00
Argenta	Pilon Ranch	30	Grate	Grate				3760.00
Argenta	Rosemont	32	Grate	Grate				5060.00
Argenta	Rosemont	33	Grate	Grate				4296.00
Argenta	Rosemont	33A	-	Culvert				1500.00
Argenta	SE Section 21	34	Backfill	Backfill	87			870.00
Argenta	Silver Rule	35	Grate	Grate				3140.00
Argenta	Starlight	36 & 37	Fence	Fence		373	2	1925.00
Argenta	Stinson	40	Culvert	Culvert				1500.00
Argenta	Stinson	41	-	Culvert				1500.00
Argenta	Storm King	42	Grate	Grate				4296.00
Argenta	SW Section 8	43	Culvert	Fence		227	2	1195.00
Argenta	White Lime	47	Backfill	Backfill	40			400.00
Argenta	Total				1453.5	808	8	\$ 90,713.00



Table 2 (continued)

DISTRICT	SITE	#	SPECIFIED	CONSTRUCTED	C.Y.	L.F.	SIGNS	COST
Baldy Mountain	Baldy #4	1	Culvert	Culvert				1500.00
Baldy Mountain	Cable	2	Cable Net	Culvert				1500.00
Baldy Mountain	Dillon	3	Culvert	Culvert				1500.00
Baldy Mountain	Dillon	4	Culvert	Culvert				1500.00
Baldy Mountain	Dillon	5	Culvert	Culvert				1500.00
Baldy Mountain	Dillon	6	Backfill	Backfill	16			160.00
Baldy Mountain	Driscoll Creek	7	Backfill	Backfill	65			650.00
Baldy Mountain	Driscoll Creek	8	Backfill	Backfill	64			640.00
Baldy Mountain	Durham Bull	9	Cable Net	Culvert				1500.00
Baldy Mountain	Grizzly Bear	10	Grate	Grate				3140.00
Baldy Mountain	Steel Creek	16	Backfill	Backfill	96			960.00
Baldy Mountain	West Fork	17	Backfill	Backfill	33			330.00
Baldy Mountain	Wild Bat	18	Backfill	Backfill	46			460.00
Baldy Mountain	Wild Bat	19	Backfill	Backfill	51			510.00
<hr/>								
Baldy Mountain	Total				371			\$ 15,850.00
<hr/>								
Bannack	Arcata	A	Backfill	-				
Bannack	Bannack State Pk	B	Adit Door	Adit Door				1200.00
Bannack	Bannack State Pk	C	Blast	Blast				300.00
Bannack	Bannack State Pk	C1	-	Blast				300.00
Bannack	Bannack State Pk	C2	-	Blast				300.00
Bannack	Bannack State Pk	C3	-	Blast				300.00
Bannack	Bannack State Pk	C4	-	Blast				300.00
Bannack	Beaverhead	D	Cable Net	-				
Bannack	Beaverhead	E	Cable Net	-				
Bannack	Bon Accord	F	Backfill	Backfill	67			670.00
Bannack	Bon Accord	G	Backfill	-				
Bannack	Box X	H	Backfill	Backfill	283			2830.00
Bannack	Excelsior	I	Grate	Sp. Grate				3760.00
Bannack	Excelsior	J	Cable Net	Cable Net				600.00
Bannack	Excelsior	K	Cable Net	Culvert				1500.00
Bannack	French	L	Culvert	Culvert				1500.00
Bannack	French	M	Culvert	Culvert				1500.00
Bannack	Gold Bug	N	Cable Net	-				
Bannack	Golden Leaf	O & P	Fence	Fence		468	4	2460.00
Bannack	Golden Ledge	Q	Adit Door	Culvert				1500.00
Bannack	Hendricks	R	Fence	Fence		736	5	3830.00
Bannack	Hendricks	R1	-	Blast				300.00
Bannack	Hendricks	R2	-	Blast				300.00
Bannack	Hendricks	S	Blast	Blast				300.00
Bannack	Hendricks	T	Blast	Blast				300.00
Bannack	Hendricks	U	Blast	Blast				300.00
Bannack	Hendricks	V	Blast	Blast				300.00
Bannack	Hendricks	W	Blast	Blast				300.00
Bannack	Hendricks	X	Blast	Blast				300.00
Bannack	Hendricks	Y	Blast	Blast				300.00



Table 2 (continued)

DISTRICT	SITE	#	SPECIFIED	CONSTRUCTED	C.Y.	L.F.	SIGNS	COST
Bannack	SE Section 5	Z	Backfill	-				
Bannack	SE Section 5	AA	Backfill	-				
Bannack	SE Section 5	BB	Backfill	-				
Bannack	Southmont	CC	Backfill	-				
Bannack	Southmont	DD	Backfill	-				
Bannack	SW Section 5	EE	Backfill	-				
Bannack	SW Section 5	FF	Backfill	-				
Bannack	SW Section 5	GG	Backfill	-				
Bannack	SW Section 5	HH	Backfill	-				
Bannack	SW Section 5	II	Backfill	-				
Bannack	SW Section 5	JJ	Backfill	-				
Bannack	SW Section 5	KK	Backfill	-				
Bannack	SW Section 5	LL	Backfill	Culvert				1500.00
Bannack	SW Section 5	SS	-	Fence		248	4	1360.00
Bannack	Wadam	MM,NN,OO	Fence	Fence		508	4	2660.00
Bannack	Wadam	PP	Cable Net	-				
Bannack	Wadam	QQ	Cable Net	-				
Bannack	Wallace	RR	Cable Net	Culvert				1500.00
<hr/>								
Bannack	Total				350	1960	17	\$ 32,570.00
<hr/>								
Blacktail/Ruby	Ground Hog	11	Backfill	Backfill	278			2780.00
Blacktail/Ruby	Ground Hog	12	Backfill	Culvert				1500.00
Blacktail/Ruby	Nevada	1	Backfill	Backfill	62			620.00
Blacktail/Ruby	Nevada	2	Backfill	Backfill	155			1550.00
Blacktail/Ruby	NW Section 24	3	Backfill	Backfill	44			440.00
Blacktail/Ruby	Smith-Dillon	4	Backfill	Backfill	116			1160.00
Blacktail/Ruby	Smith-Dillon	5	Backfill	-				
Blacktail/Ruby	Smith-Dillon	6	Backfill	Backfill	30			300.00
Blacktail/Ruby	Smith-Dillon	7	Backfill	Backfill	25			250.00
Blacktail/Ruby	Stone Creek	8	Backfill	Backfill	70			700.00
Blacktail/Ruby	Stone Creek	9	Backfill	Backfill	114			1140.00
Blacktail/Ruby	Stone Creek	10	Backfill	Backfill	64			640.00
<hr/>								
Blacktail/Ruby	Total				958			\$ 11,080.00
<hr/>								
Blue Wing	Arctic	1	Grate	Grate				4960.00
Blue Wing	Bob Ingersoll	2	Culvert	Culvert				1500.00
Blue Wing	Bob Ingersoll	3	Grate	Sp.Grte				3235.00
Blue Wing	Bob Ingersoll	4	Grate	Sp.Grte				3038.00
Blue Wing	Cottontail	4A	-	Culvert				1500.00
Blue Wing	Cottontail	5	Culvert	Culvert				1500.00
Blue Wing	Cottontail	5A	-	Culvert				1500.00
Blue Wing	Cottontail	6	-	Fence		105	2	585.00
Blue Wing	Cottontail	7	-	Fence		70	2	410.00
Blue Wing	Cottontail	7A	-	Sp.Grte				3760.00



Table 2 (continued)

DISTRICT	SITE	#	SPECIFIED	CONSTRUCTED	C.Y.	L.F.	SIGNS	COST
Blue Wing	Francis H.	8	Backfill	Backfill	78			780.00
Blue Wing	Francis H.	9	Backfill	Backfill	25			250.00
Blue Wing	Francis H.	10	Backfill	Backfill	20			200.00
Blue Wing	Hangmans Gulch	11	Backfill	Backfill	21			210.00
Blue Wing	Hangmans Gulch	12	Backfill	Backfill	48			480.00
Blue Wing	Hangmans Gulch	13	Backfill	Backfill	52			520.00
Blue Wing	Hangmans Gulch	14	Backfill	Backfill	57			570.00
Blue Wing	Huron	15	Backfill	Backfill	59			590.00
Blue Wing	Huron	16	Backfill	Backfill	41			410.00
Blue Wing	Huron	18	Grate	Grate				3140.00
Blue Wing	Huron	18A	-	Fence		217	2	1145.00
Blue Wing	Huron	21	Grate	Grate				3140.00
Blue Wing	Huron	21A	-	Fence		113	1	595.00
Blue Wing	Huron	23	Grate	Grate				3760.00
Blue Wing	Huron	23A	-	Fence		96	1	510.00
Blue Wing	Huron	23B	-	Fence		67	1	365.00
Blue Wing	Huron	26	Grate	Grate				3760.00
Blue Wing	Huron	26A	-	Fence		146	2	790.00
Blue Wing	Huron	27	Cable Net	Cable Net				600.00
Blue Wing	Huron	29	Cable Net	Cable Net				600.00
Blue Wing	Huron	30	Grate	Grate				3760.00
Blue Wing	Huron	30A	-	Fence		245	2	1285.00
Blue Wing	Huron	31	Grate	Grate				5060.00
Blue Wing	Huron	32	Grate	Grate				3140.00
Blue Wing	Huron	33	Cable Net	Cable Net				600.00
Blue Wing	Huron	34	Grate	Grate				3295.00
Blue Wing	Huron	34A	-	Fence		99	1	525.00
Blue Wing	Huron	34B	-	Fence		309	2	1605.00
Blue Wing	Huron	39	Grate	Fence		114	2	630.00
Blue Wing	Huron	40	Grate	Grate				3140.00
Blue Wing	Huron	41	Culvert	Culvert				1500.00
Blue Wing	Huron	42	Culvert	Culvert				1500.00
Blue Wing	Iron Mask	43	Culvert	Culvert				1500.00
Blue Wing	Kent	44	Backfill	Backfill	115			1150.00
Blue Wing	Kent	45	Grate	Grate				4022.40
Blue Wing	Kent	46	Cable Net	Cable Net				600.00
Blue Wing	Kent	47	Backfill	Backfill	220			2200.00
Blue Wing	Kent	48	Cable Net	Cable Net				600.00
Blue Wing	Kent	49	Culvert	Culvert				1500.00
Blue Wing	Kent	50	Backfill	Backfill	76			760.00
Blue Wing	Kent	51	Grate	Grate				3760.00
Blue Wing	Log Cabin	52	Culvert	Culvert				1500.00
Blue Wing	Nettie	53	Grate	Grate				5060.00
Blue Wing	Nettie	54	Backfill	Backfill	141			1410.00
Blue Wing	Nettie	55	Backfill	Backfill	58			580.00







Table 2 (continued)

DISTRICT	SITE	#	SPECIFIED	CONSTRUCTED	C.Y.	L.F.	SIGNS	COST
Blue Wing	New Departure(ND)							
Blue Wing	ND/Blue Dot	ND1	-	Backfill	377			3770.00
Blue Wing	ND/Coppin	ND21	-	Grate				3760.00
Blue Wing	ND/Hickey	ND4	-	Culvert				1500.00
Blue Wing	ND/Lacey	ND23	-	Culvert				1500.00
Blue Wing	ND/Manganese #1	ND2	-	Culvert				1500.00
Blue Wing	ND/Manganese #2	ND3	-	Backfill	106			1060.00
Blue Wing	ND/No Name #1	ND12	-	Culvert				1500.00
Blue Wing	ND/No Name #1	ND12	-	Backfill	15			150.00
Blue Wing	ND/No Name #2	ND15	-	Culvert				1500.00
Blue Wing	ND/No Name #3	ND17	-	Culvert				1500.00
Blue Wing	ND/No Name #4	ND22	-	Culvert				1500.00
Blue Wing	ND/Powder Mag #1	ND9	-	Culvert				1500.00
Blue Wing	ND/Powder Mag #2	ND10	-	Culvert				1500.00
Blue Wing	ND/Quien Sabe #1	ND7	-	Grate				3760.00
Blue Wing	ND/Quien Sabe #2	ND8	-	Culvert				1500.00
Blue Wing	ND/Rainbow	ND5	-	Culvert				1500.00
Blue Wing	ND/RR Tracks	ND13	-	Culvert				1500.00
Blue Wing	ND/Rusty Tin #1	ND11	-	Culvert				1500.00
Blue Wing	ND/Rusty Tin #2	ND16	-	Culvert				1500.00
Blue Wing	ND/Silver Springs	ND24	-	Backfill	10			100.00
Blue Wing	ND/Stinker #1	ND18	-	Backfill	10			100.00
Blue Wing	ND/Stinker #2	ND19	-	Culvert				1500.00
Blue Wing	ND/Stinker #3	ND20	-	Backfill	10			100.00
Blue Wing	ND/Tree Hole	ND14	-	Backfill	528			5280.00
Blue Wing	ND/Upper Staplton	ND6	-	Backfill	15			150.00
Blue Wing	NW Section 28	56	Backfill	Backfill	33			330.00
Blue Wing	NW Section 28	57	Backfill	Backfill	68			680.00
Blue Wing	Old Charter Oak	58	Backfill	Adit Door				1200.00
Blue Wing	Old Charter Oak	59	Backfill	Culvert				1500.00
Blue Wing	Old Charter Oak	59A	-	Backfill	323			3230.00
Blue Wing	Old Charter Oak	60	Backfill	Backfill	22			220.00
Blue Wing	Silver Buckle	61	Grate	Grate				4296.00
Blue Wing	Silver Buckle	62	Fence	Fence		181	2	965.00
Blue Wing	Silver Buckle	63	Grate	Grate				4558.40
Blue Wing	Silver Buckle	64	Fence	Fence		293.5	2	1527.50
Blue Wing	Silver Buckle	64A	-	Fence		134	2	730.00
Blue Wing	South Oak	65	Backfill	Blast				300.00
Blue Wing	Wheal Rose	66	Backfill	Culvert				1500.00
Blue Wing	Total				2528	2189.5	24	\$ 156,852.30



Table 2 (continued)

DISTRICT	SITE	#	SPECIFIED	CONSTRUCTED	C.Y.	L.F.	SIGNS	COST
Clark Canyon	Clark Canyon	1	Backfill	Backfill	30			300.00
Clark Canyon	Clark Canyon	2	Backfill	Backfill	241.5			2415.00
Clark Canyon	Clark Canyon	3	Backfill	Backfill	304.5			3045.00
Clark Canyon	Clark Canyon	4	Backfill	Backfill	161			1610.00
Clark Canyon	Clark Canyon	5	Backfill	Backfill	185.5			1855.00
<hr/>								
Clark Canyon	Total				922.5		\$	9,225.00
<hr/>								
Ermont	Badger	1	Grate	Grate				7990.00
Ermont	East Ermont	2	Grate	Grate				5060.00
Ermont	Ermont #19	3	Grate	Grate				5060.00
Ermont	Ermont #19	4	Grate	Grate				4296.00
Ermont	Ermont #19	5	Grate	Grate				3760.00
Ermont	Ermont Mill	8	-	Sp.Grates				3450.00
Ermont	Opy	6	Grate	Grate				4296.00
Ermont	South Ermont	7	Grate	Grate				5060.00
<hr/>								
Ermont	Total						\$	38,972.00
<hr/>								
Polaris	Silver King	G	Culvert	Culvert				1500.00
Polaris	Silver King	H	Culvert	Culvert				1500.00
Polaris	Silver King	H1	-	Grate				3140.00
Polaris	Silver King	H2	-	Backfill	30			300.00
Polaris	Silver King	I	Grate	Grate				3760.00
Polaris	Silver King	I1	-	Culvert				1300.00
Polaris	Silver King	I2	-	Backfill	33			330.00
Polaris	Silver King	J	Fence	Culvert				1300.00
<hr/>								
Polaris	Total				63		\$	13,130.00
<hr/>								
Mobilization							\$	8,000.00
Miscellaneous Site Work							\$	2,600.00
<hr/>								
Phase 22 Project Total					6646	4966.5	54	\$ 378,992.30



Figure 1

ANALYSIS OF PROFESSIONAL SERVICE FEES  
HAZARDOUS MINE OPENING PROJECT - PHASE 22

DESIGN COSTS - Grant Preparation, Site Evaluation, Engineering and Bid Documents	\$ 34,503.92
INSPECTION COSTS - Construction Administration, Construction Inspection and Final Report	\$ 54,756.32 -----
CHEN-NORTHERN COSTS	\$ 89,260.24
STEEL GRATE FABRICATION COSTS	\$ 57,207.00
CONTRACTORS CONSTRUCTION COSTS	\$ 321,785.30 -----
TOTAL PHASE 22 CONSTRUCTION COST	\$ 378,992.30

PERCENTAGE ANALYSIS

Chen-Northern Design Cost/Total Construction Cost	9.1 %
Chen-Northern Inspection Cost/Total Construction Cost	14.4 %
Total Chen-Northern Cost/Total Construction Cost	23.6 %



## 4.0 SUMMARY

### 4.1 COMPLETED RECLAMATION

The original Phase 22 contract specified reclamation consisting of 45 steel grates, 18 culverts, 17 cable nets, 2 adit door, 7 fence sites, backfilling 78 openings and obstructing 13 openings by blasting. The actual work constructed amounted to installing 48 steel grates, 48 culverts, 6 cable nets, 2 adit doors, erecting 22 fences, backfilling 71 openings, and obstructing 14 openings by blasting. A total of 52 new openings were included in the project and 21 of the original openings were deleted.

The most significant change involved the installation of culverts in place of the cable nets specified in the bid document. A majority of the adit portals consisted of rock that was fractured and unsupported. The vibration caused by the drilling required for rock bolt installation often jeopardized the operators safety by dislodging loose rock. In numerous cases a drill hole suitable for rock bolt installation could not be obtained therefore, culverts were installed in these portals instead.

Openings found during the course of construction were added to the project and others were deleted due to their natural collapse since the time of inventory. Other changes resulted from directives issued by new owners or lessees not originally contacted for reclamation consent.

Numerous openings at the New Departure Site in the Blue Wing district were added to the project after landowner consent was finally received. This site was part of the original Phase 22 package but was dropped when consent had not been received in time for project finalization.

Renewed mining in the Bannack district resulted in a number of changes to the specified work. Several openings in the project were reclaimed by a placer operation prior to Phase 22 construction. Other sites originally slated for closure were dropped from the project when it became apparent that further mine development was pending in the area.

The contractor completed the work as specified within the time allowed.

### 4.2 COMMENTS

The bulkhead closures installed may protect against unauthorized entry for many years. Periodic monitoring will be required to verify the condition of all mine openings included in the Phase 22 Project to assure against subsidence, vandalism and damage due to natural causes. Revegetation efforts should also be monitored for success.





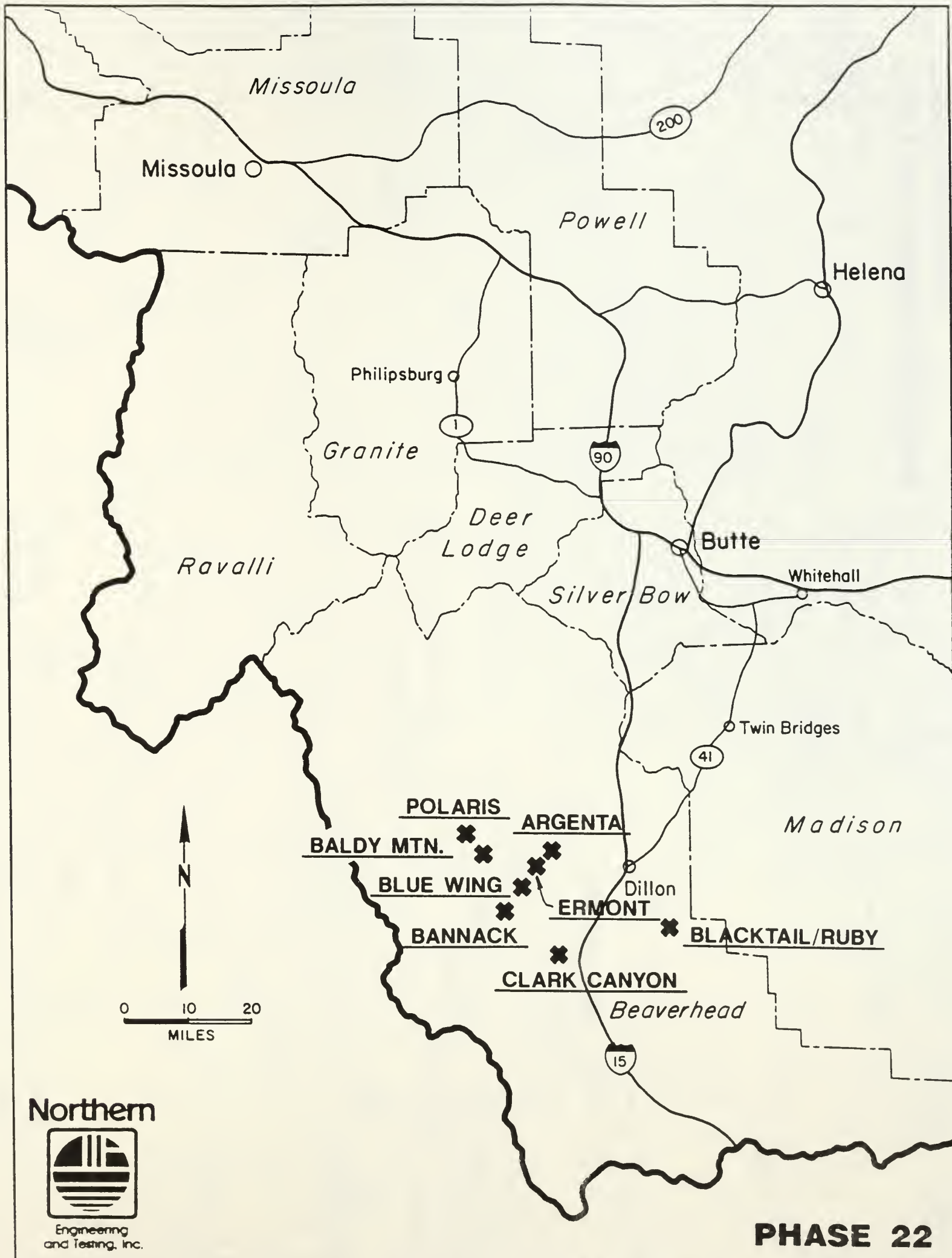
## **5.0 SLIDES**

Before, during, and post-construction slide photographs were taken of each opening. These slides and a slide log are contained in Appendix C.



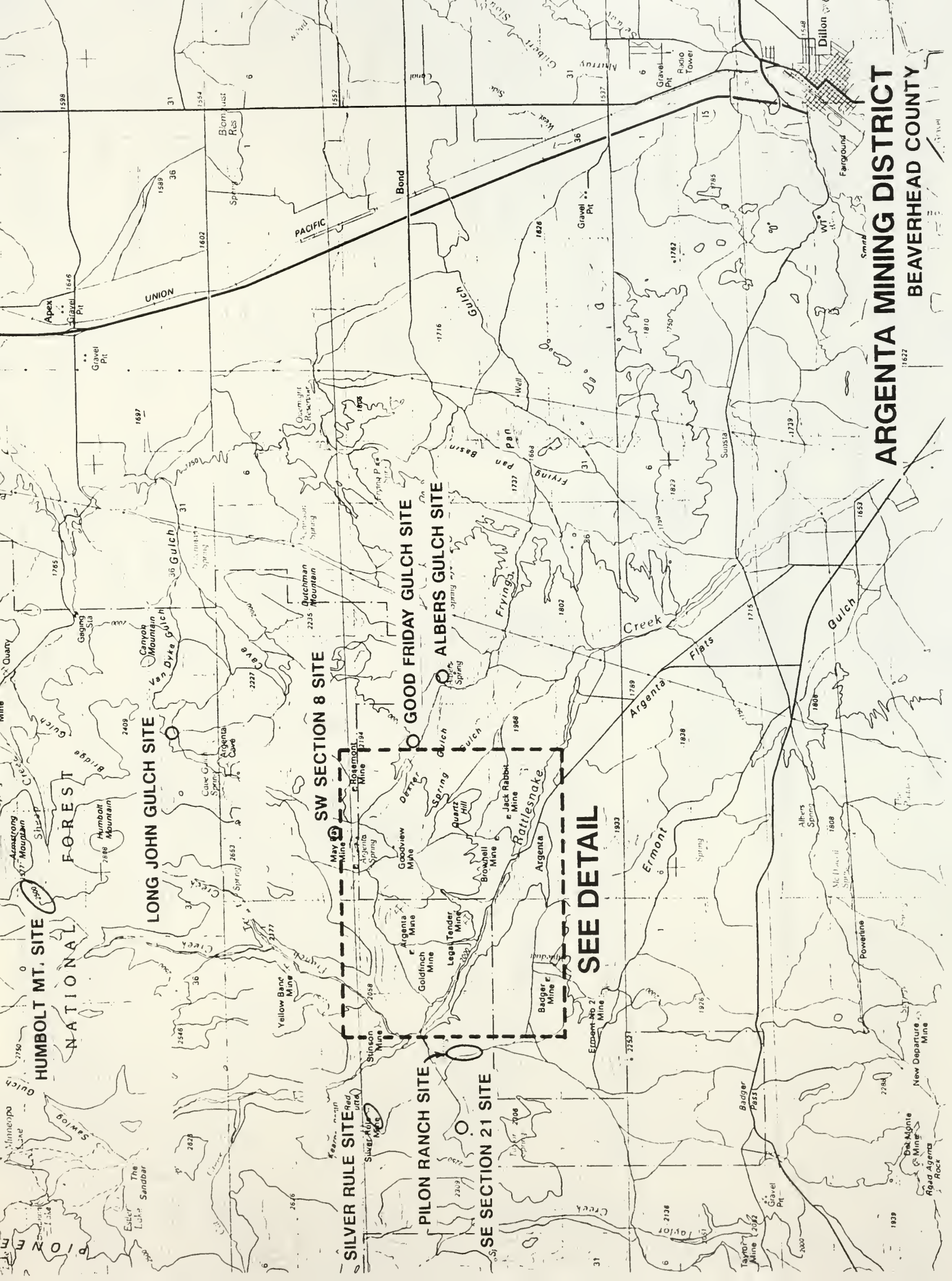
**APPENDIX A**  
**VICINITY AND SITE MAPS**





## HAZARDOUS MINE OPENING PROJECT





**ARGENTA MINING DISTRICT**  
**BEAVERHEAD COUNTY**

**HUMBOLT MT. SITE**

**NATIONAL FOREST**

**LONG JOHN GULCH SITE**

**SW SECTION 8 SITE**

**GOOD FRIDAY GULCH SITE**

**ALBERS GULCH SITE**

**SILVER RULE SITE**

**PILON RANCH SITE**

**SE SECTION 21 SITE**

**SEE DETAIL**

**NEW DEPARTURE MINE**

**DA MONTE MINE**

**ARGENTA ROCK**

**ARGENTA**

**ERMONT**

**ARGENTA**

**ERMONT**

**ARGENTA**

**ERMONT**

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**ARGENTA**

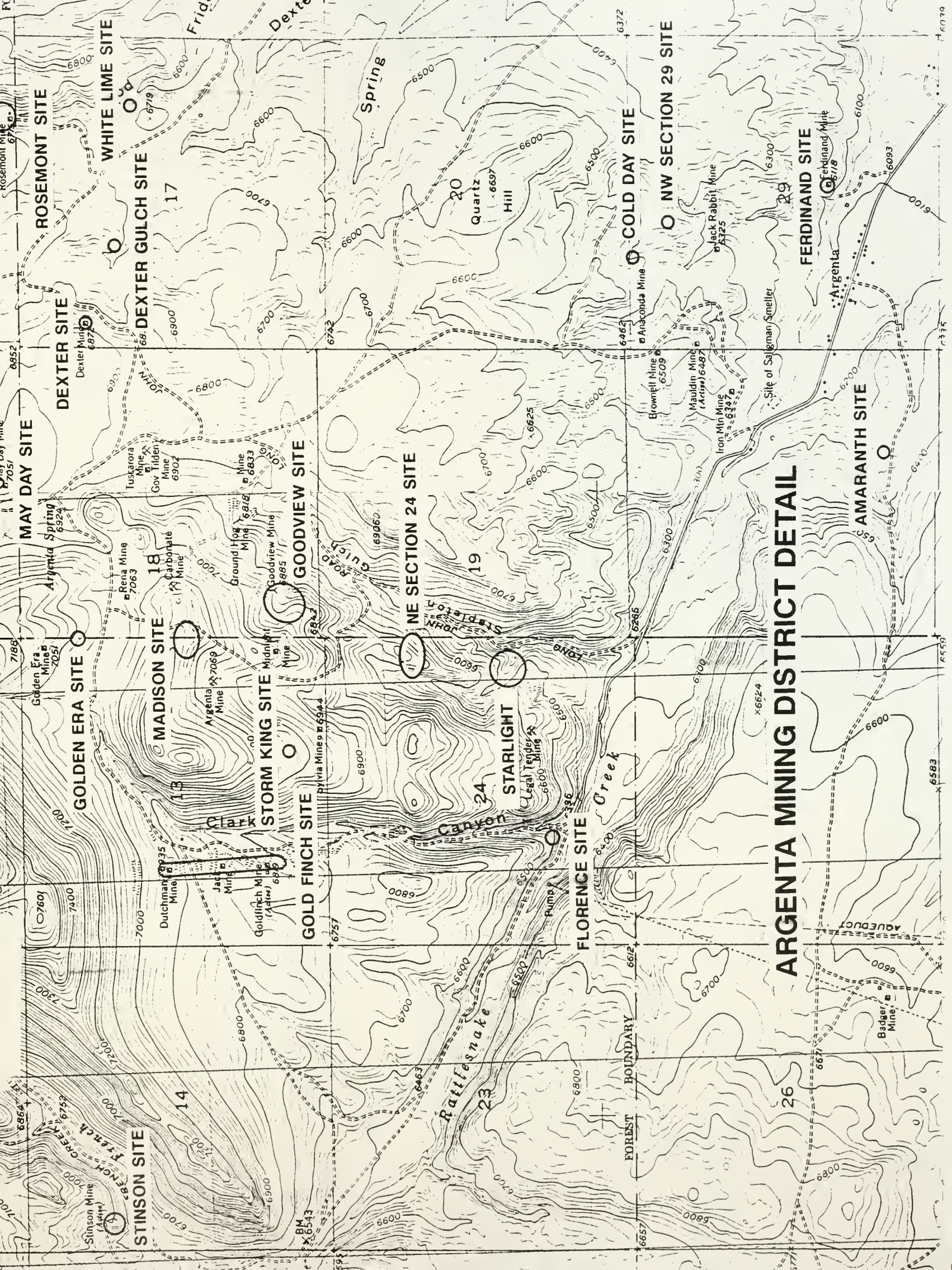
**ERMONT**

**ARGENTA**









MAY DAY SITE

ROSEMONT SITE

DEXTER SITE

WHITE LIME SITE

DEXTER GULCH SITE

MADISON SITE

GOLDEN ERA SITE

STINSON SITE

GOLD FINCH SITE

STORM KING SITE

GOLD FINCH SITE

GOODVIEW SITE

NE SECTION 24 SITE

STARLIGHT

FLORENCE SITE

FOREST BOUNDARY

COLD DAY SITE

NW SECTION 29 SITE

ARGENTA MINING DISTRICT DETAIL

FERDINAND SITE

AMARANTH SITE

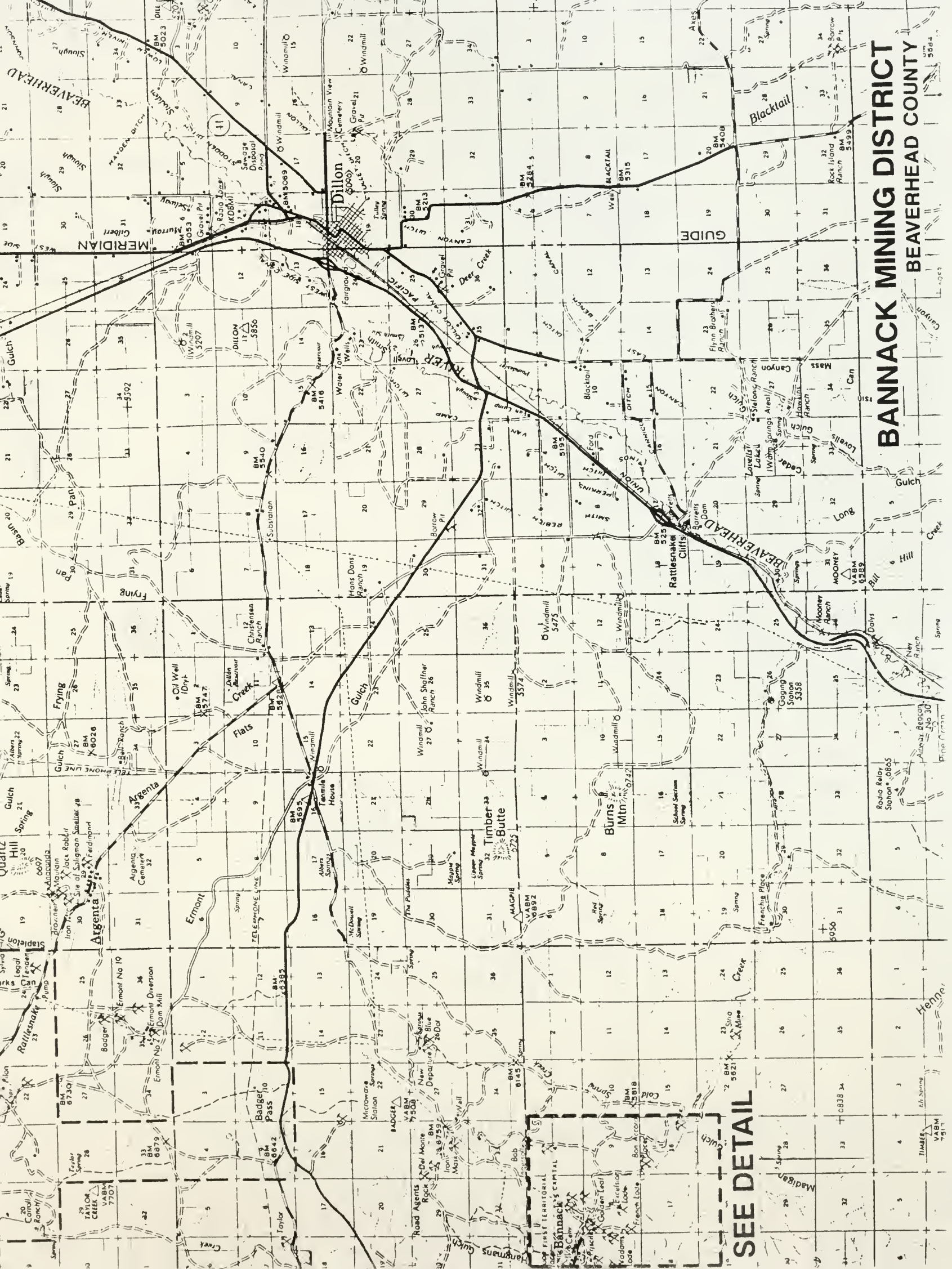










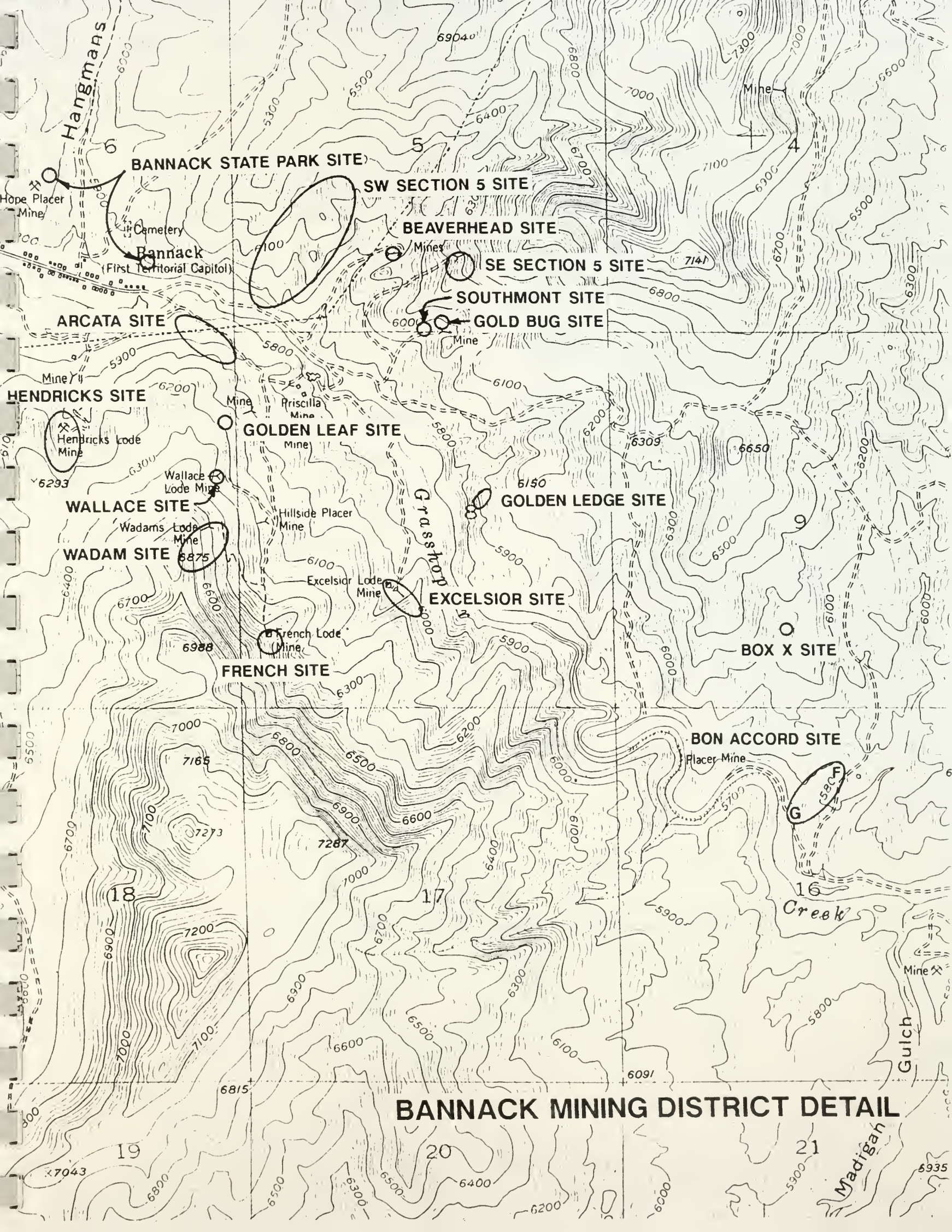


**BANNACK MINING DISTRICT**  
**BEAVERHEAD COUNTY**

**SEE DETAIL**







BANNACK STATE PARK SITE

SW SECTION 5 SITE

BEAVERHEAD SITE

SE SECTION 5 SITE

SOUTHMONT SITE

GOLD BUG SITE

ARCATA SITE

HENDRICKS SITE

GOLDEN LEAF SITE

WALLACE SITE

WADAM SITE

EXCELSIOR SITE

FRENCH SITE

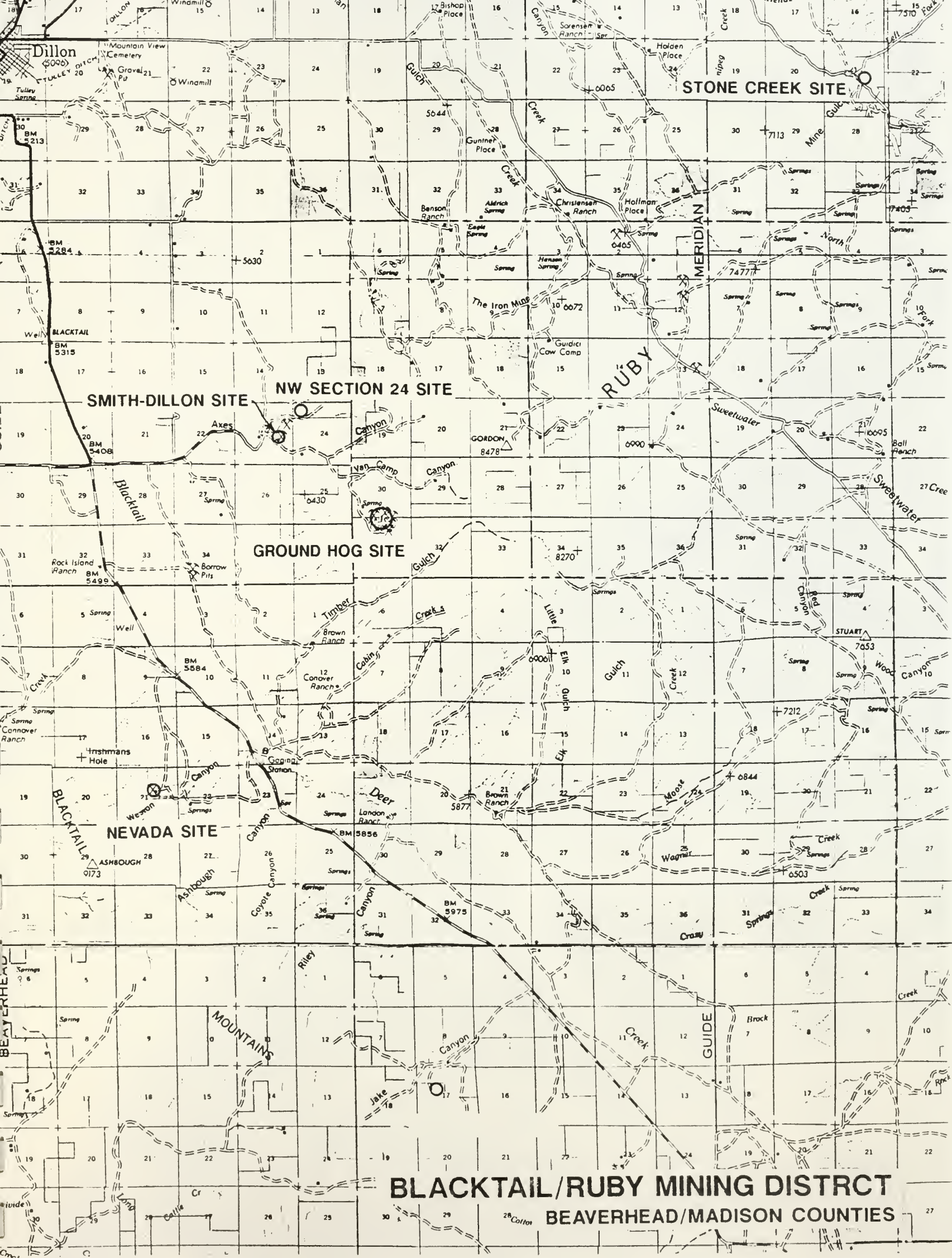
BON ACCORD SITE

BOX X SITE

BANNACK MINING DISTRICT DETAIL



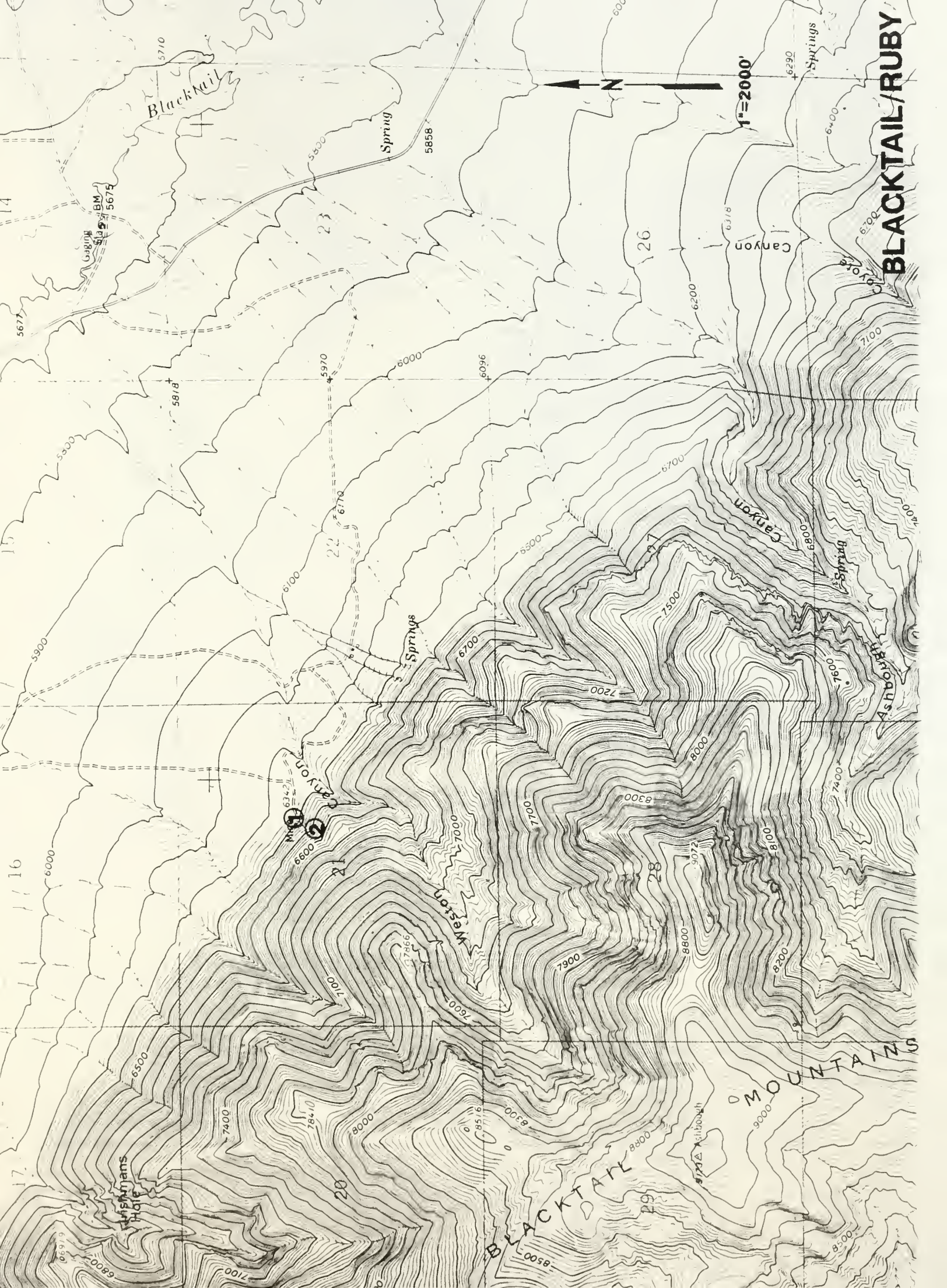




**BLACKTAIL/RUBY MINING DISTRICT**  
**BEAVERHEAD/MADISON COUNTIES**

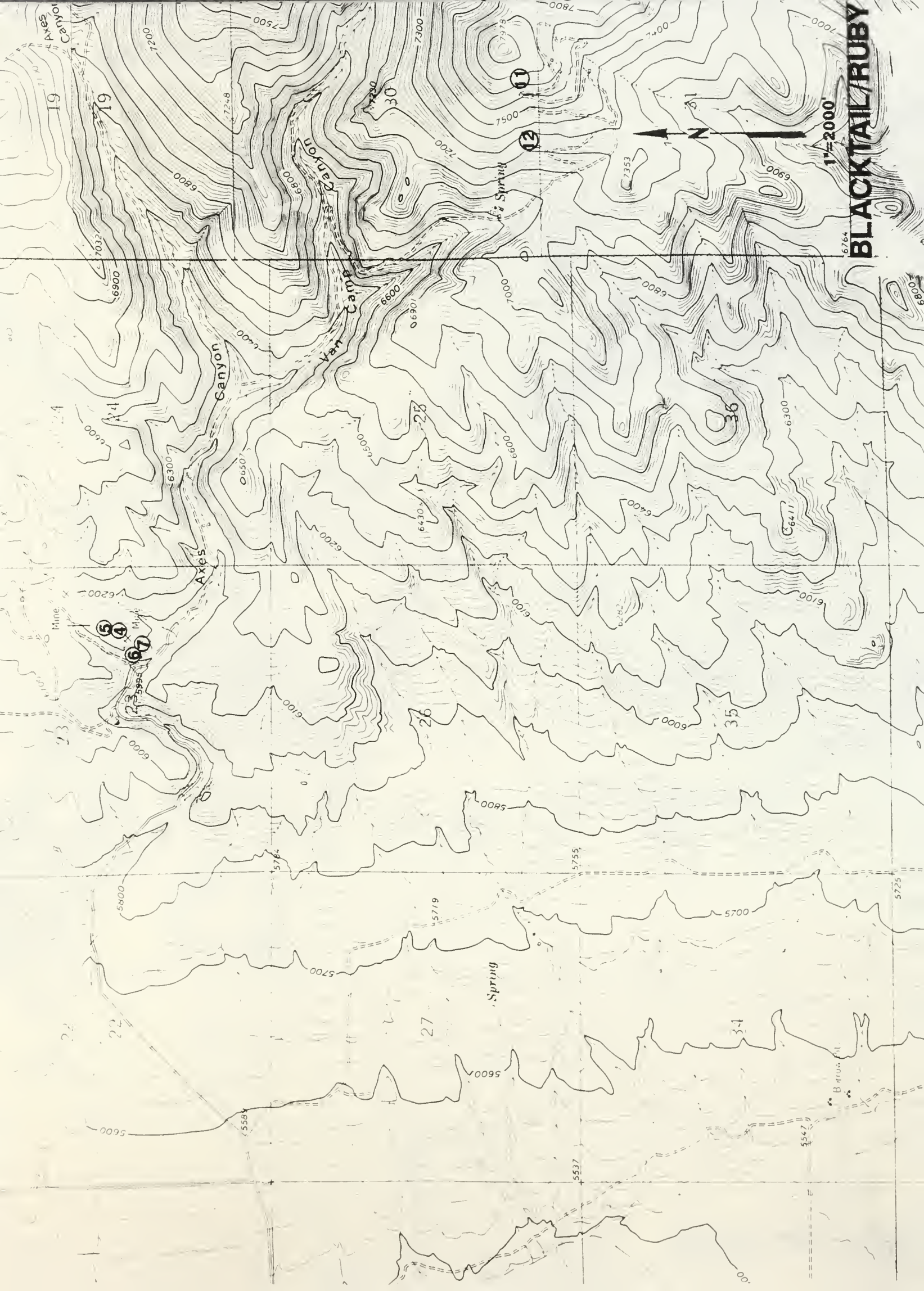












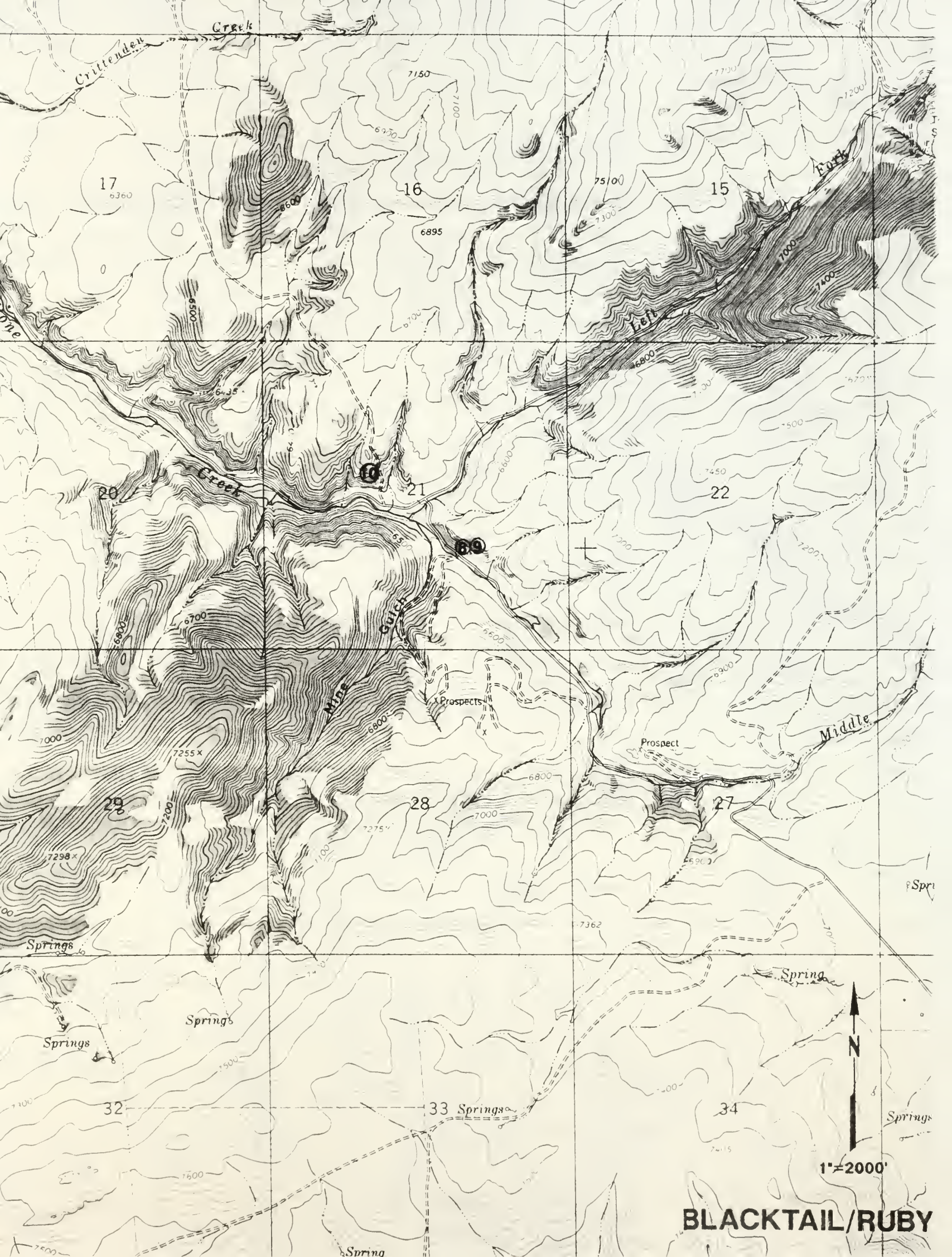
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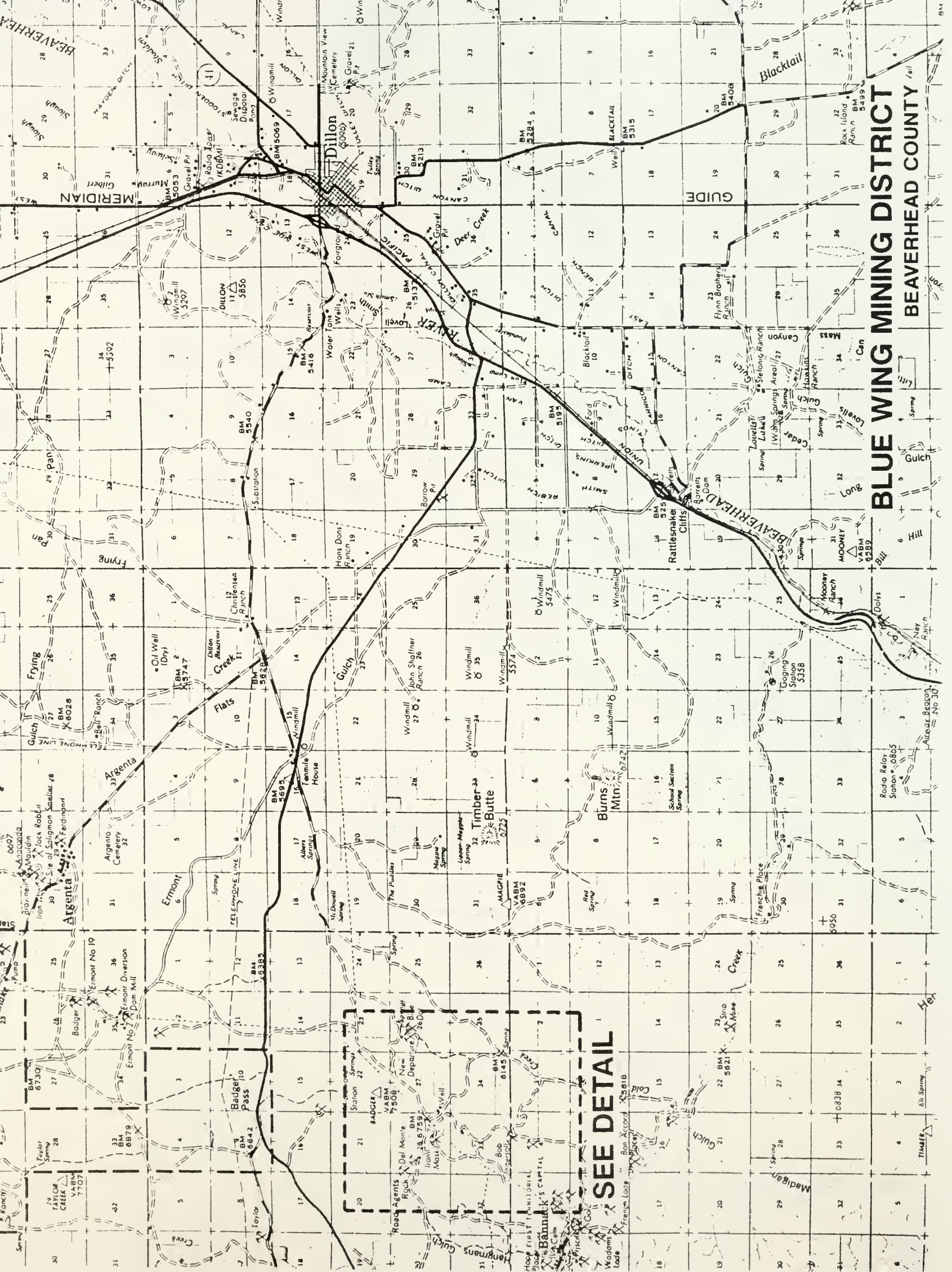


1"=2000'

BLACKTAIL/RUBY





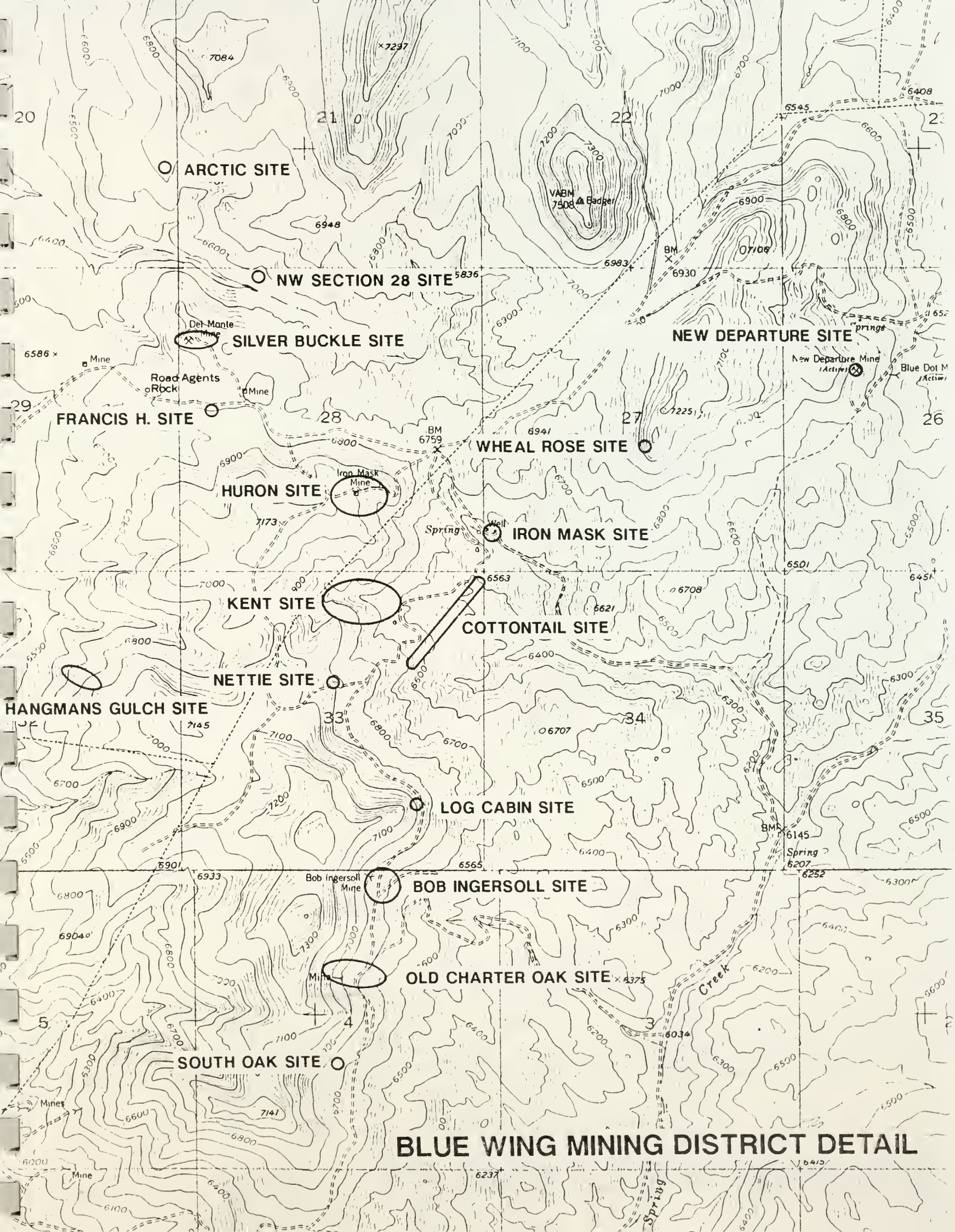


**BLUE WING MINING DISTRICT**  
**BEAVERHEAD COUNTY**

**SEE DETAIL**



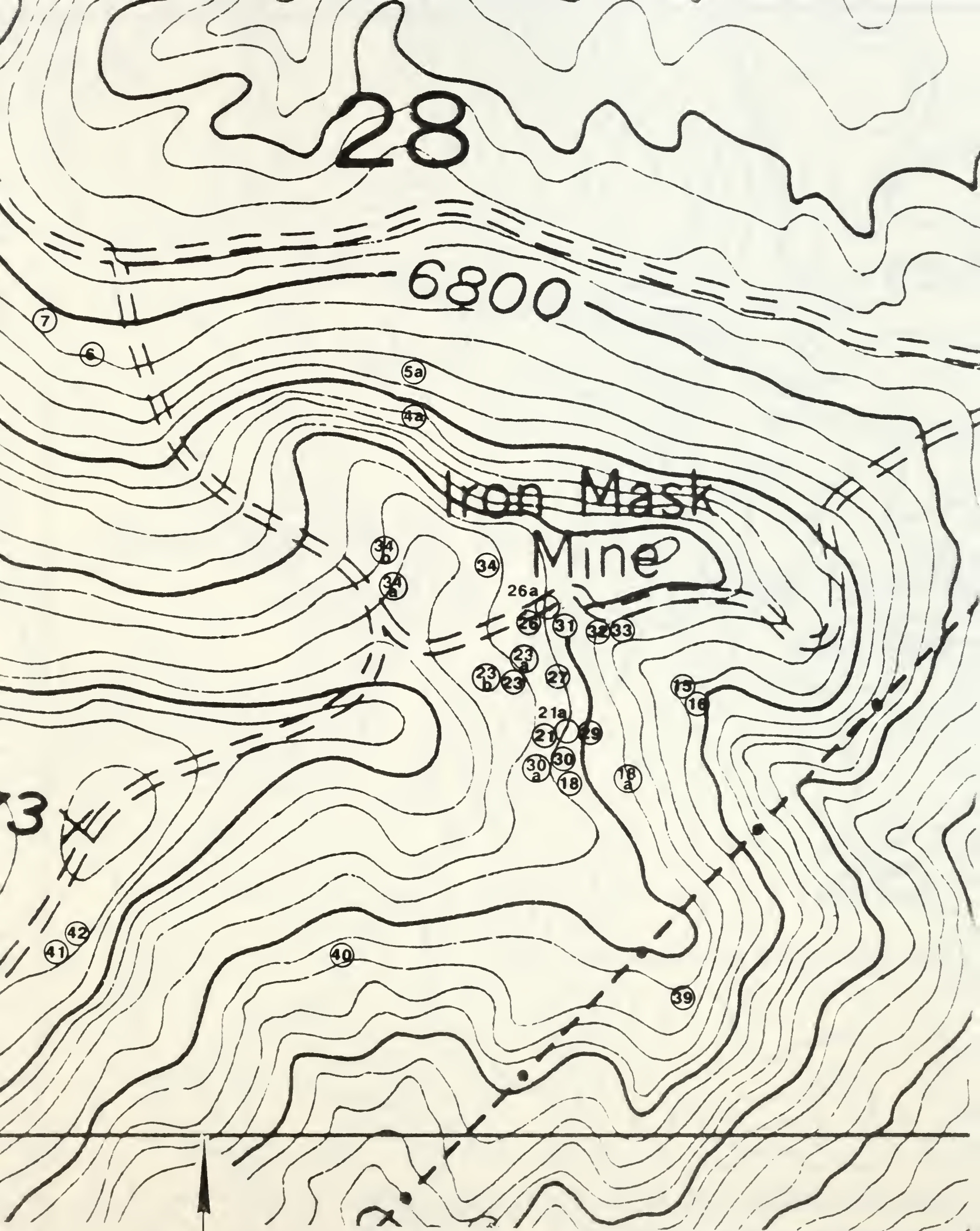




**BLUE WING MINING DISTRICT DETAIL**



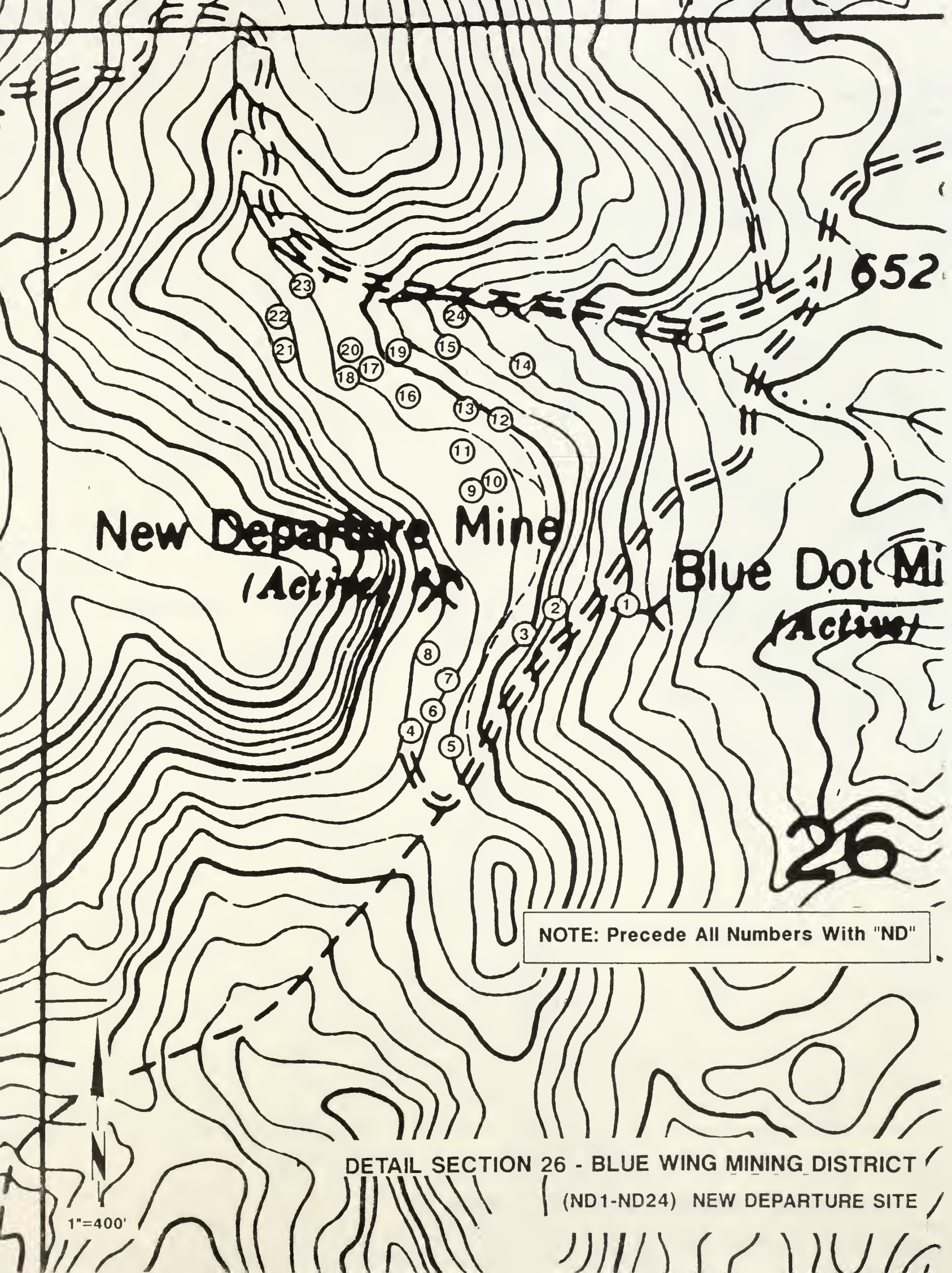




DETAIL SECTION 28 - BLUE WING MINING DISTRICT  
(15-42) HURON SITE







New Departure Mine  
(Active)

Blue Dot Mi  
(Active)

26

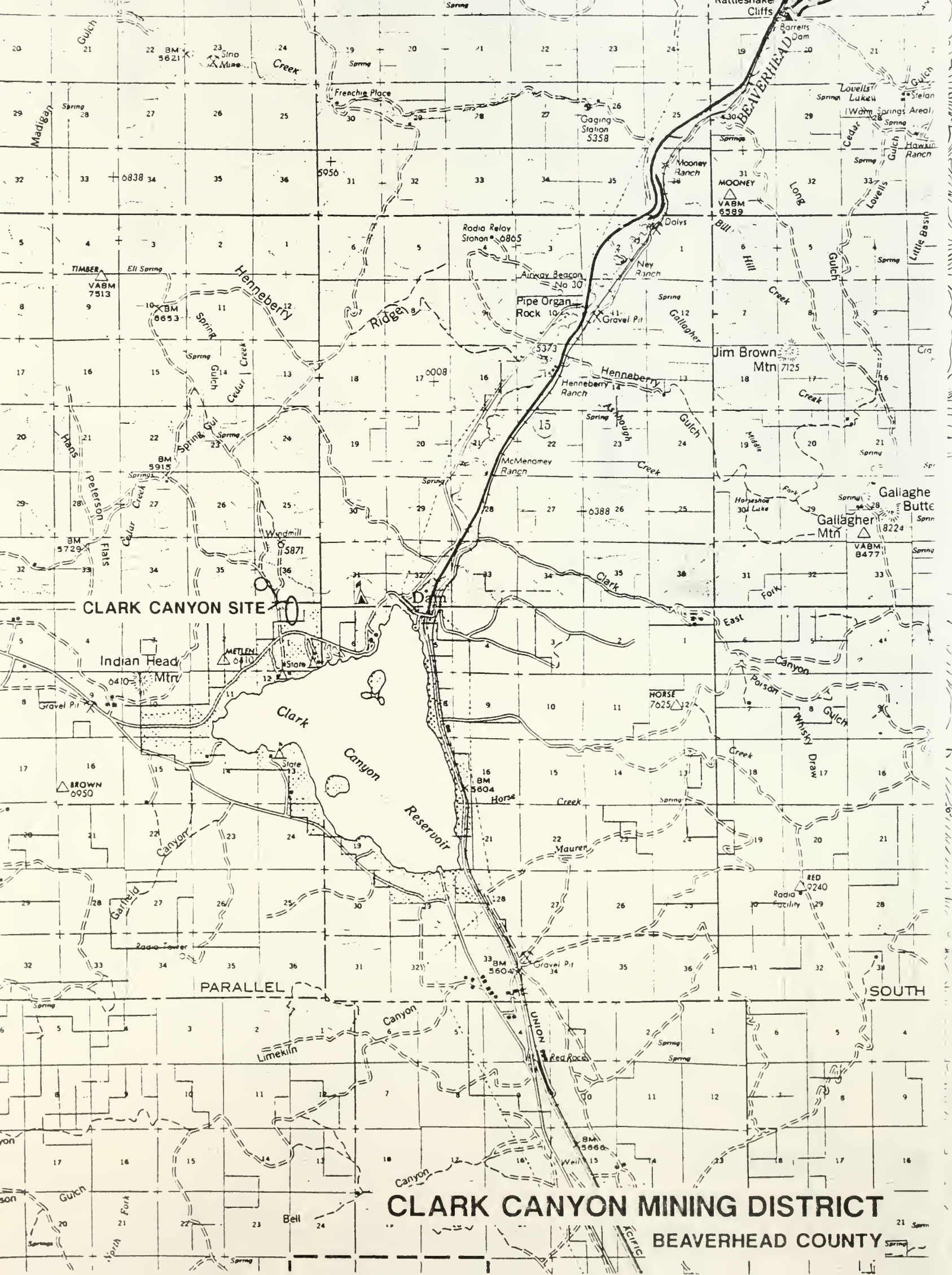
NOTE: Precede All Numbers With "ND"

DETAIL SECTION 26 - BLUE WING MINING DISTRICT  
(ND1-ND24) NEW DEPARTURE SITE

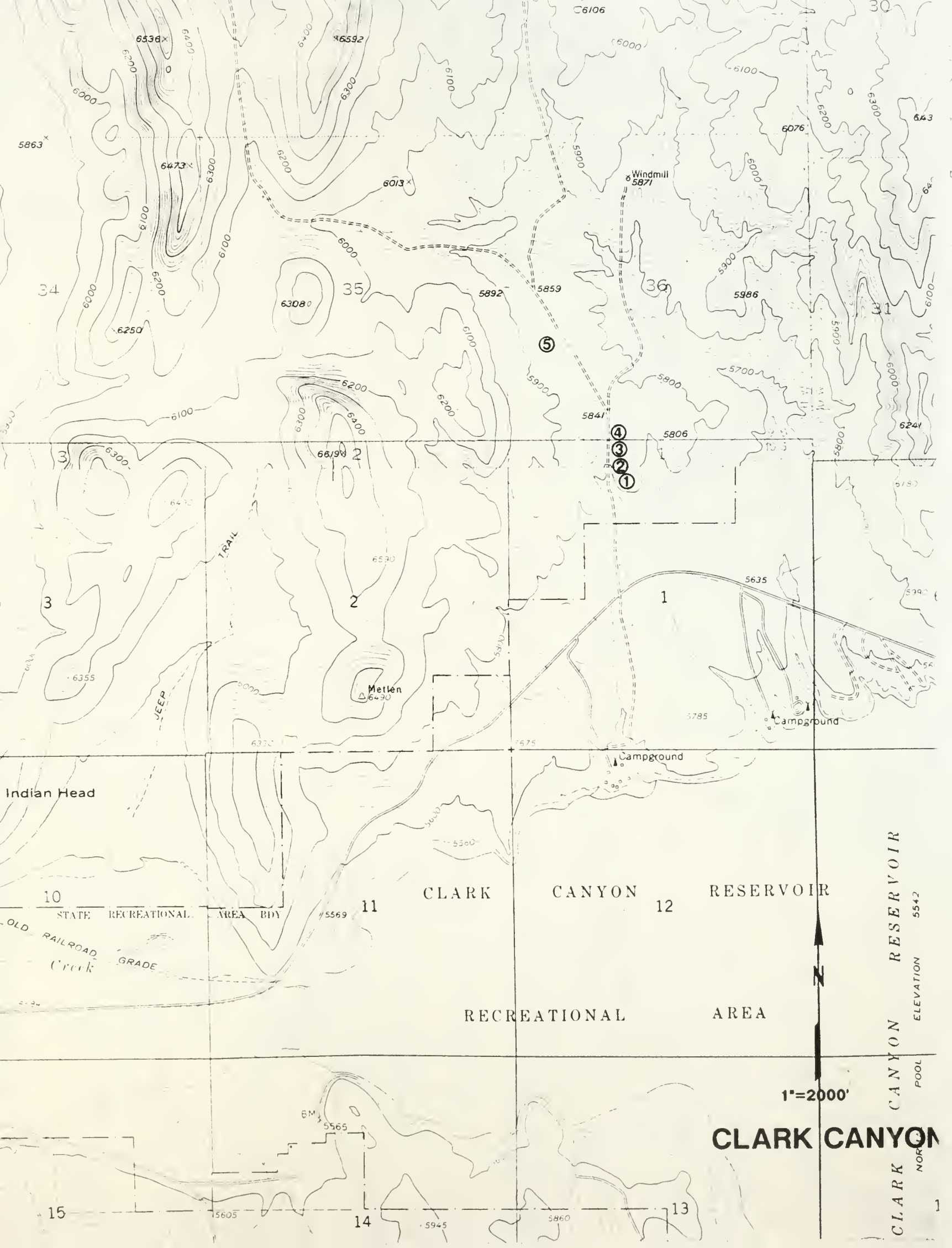
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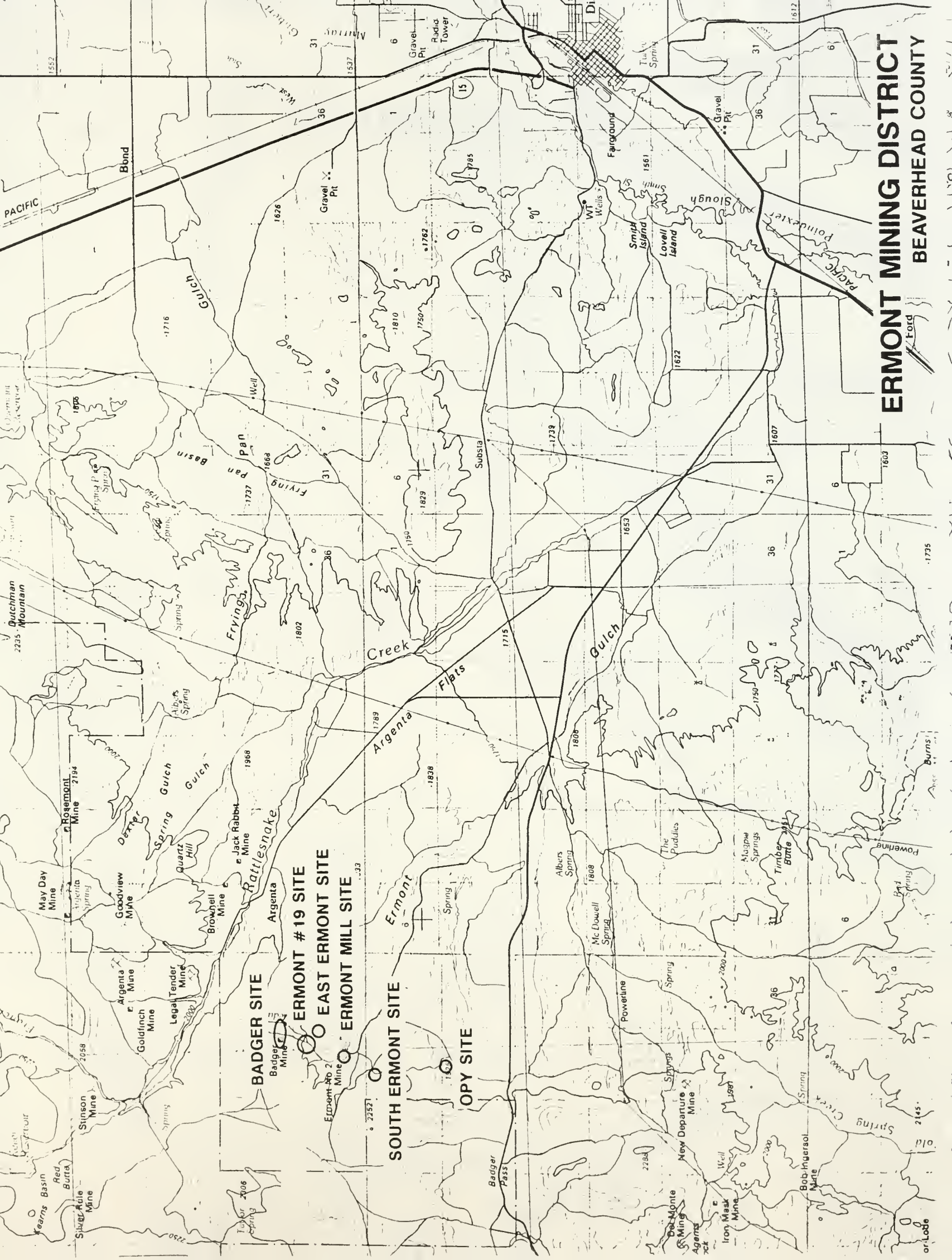












# ERMONT MINING DISTRICT

## BEAVERHEAD COUNTY

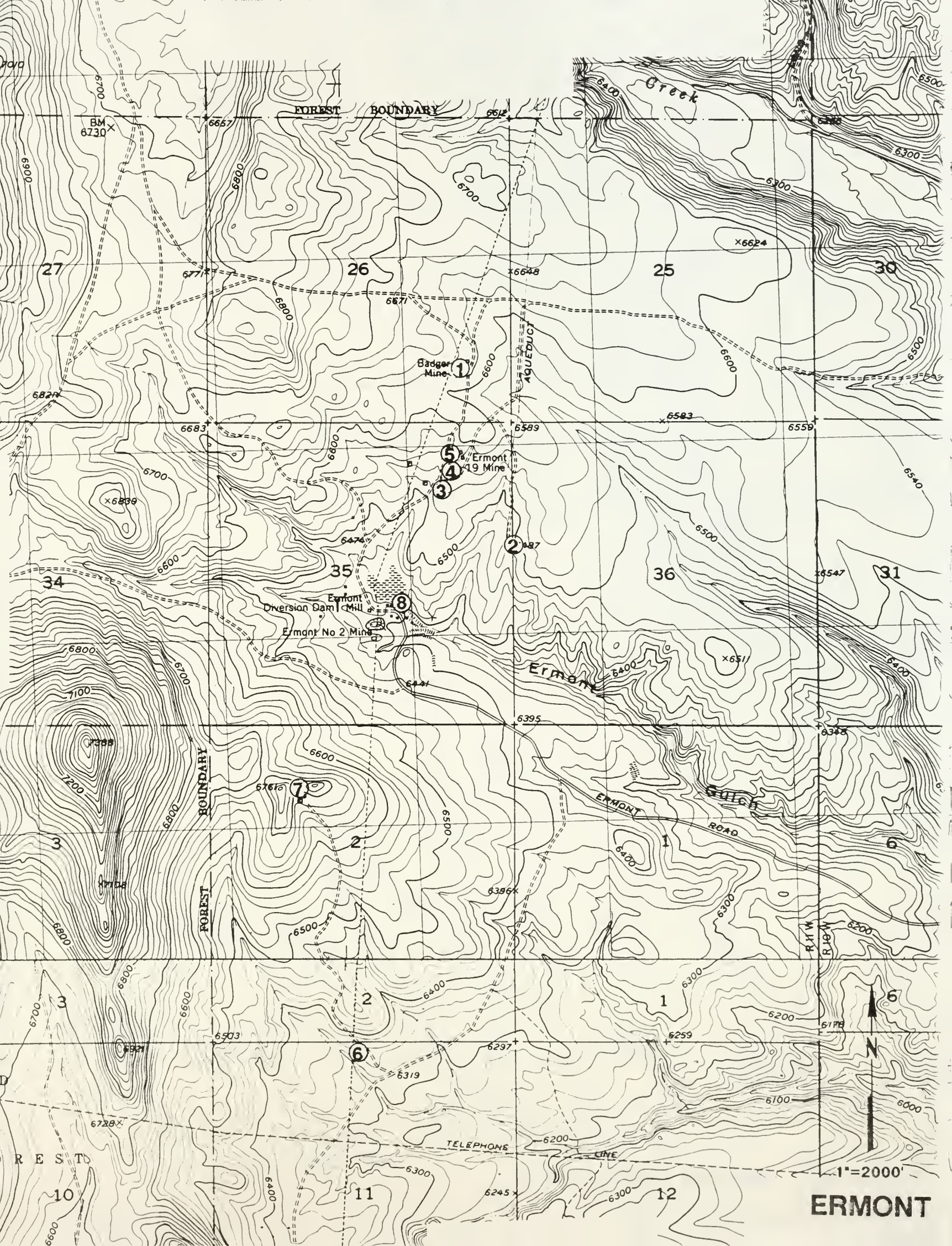
- BADGER SITE
- ERMONT #19 SITE
- EAST ERMONT SITE
- ERMONT MILL SITE

SOUTH ERMONT SITE

OPY SITE

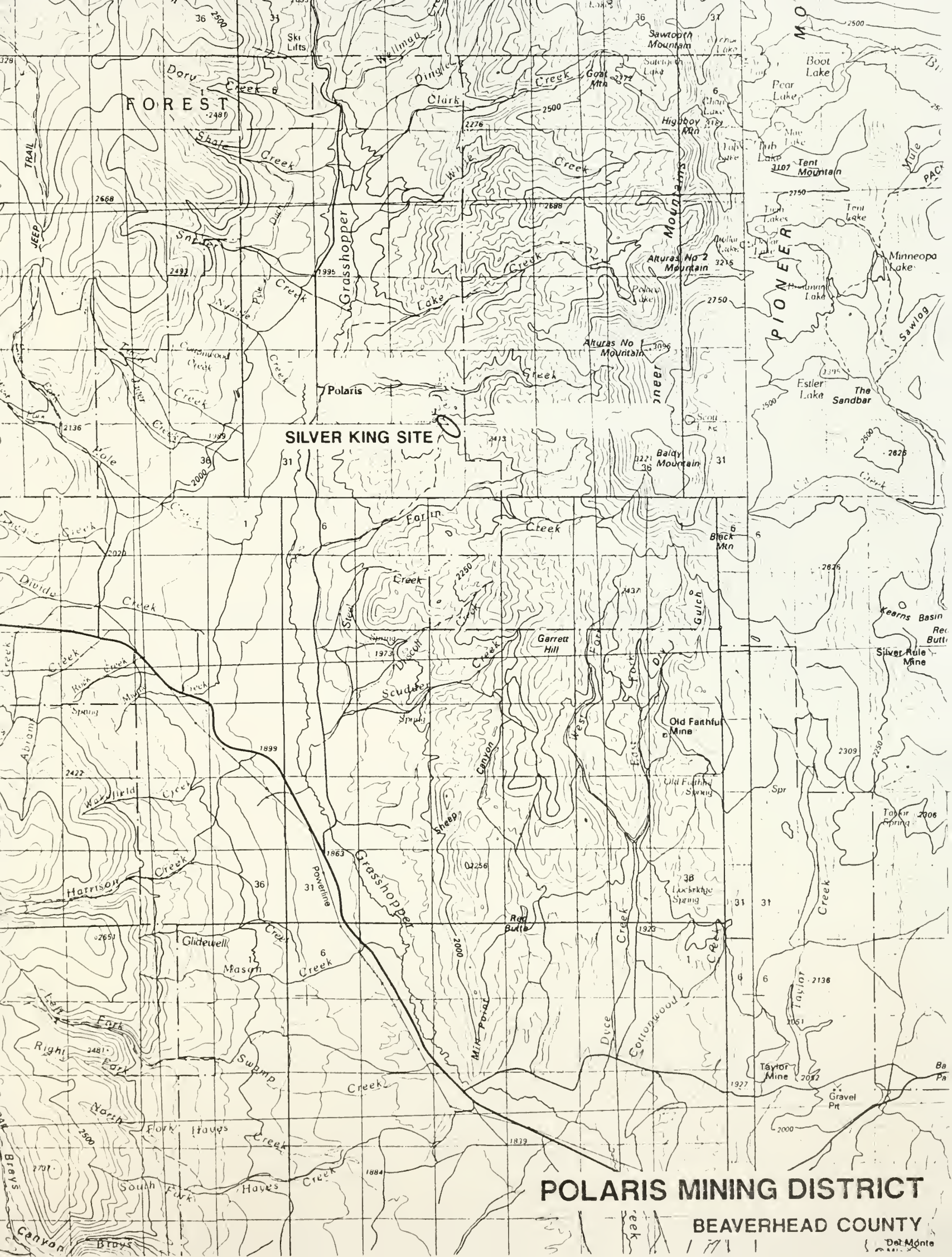












FOREST

SILVER KING SITE

POLARIS MINING DISTRICT  
BEAVERHEAD COUNTY

DeMonte



**APPENDIX B**

FINAL PAY REQUEST, WORK DIRECTIVES AND CHANGE ORDERS





SECTION II

2.13 AFFIDAVIT ON BEHALF OF CONTRACTOR

STATE OF Montana

MONT A/E 88-46-106

COUNTY OF Lewis and Clark

DATE June 7, 1989

I certify to the best of my knowledge and belief that all work has been performed and materials supplied in strict conformance with the terms and conditions of the corresponding contract documents between Department of State Lands, the Owner, and Coleman Construction, Inc., the Contractor, dated August 26, 1988 for the Hazardous Mine Opening Project, Phase 22, Beaverhead County, Montana  
(Project)

and further declare that all bills for materials, supplies, utilities, and for all other things furnished or caused to be furnished by the above-named Contractor and used in the execution of the above Contract have been fully paid, and there are no unpaid claims or demands of State Agencies, subcontractors, materialmen, mechanics, laborers or any others resulting from or arising out of work done or ordered to be done by said Contractor under the above-identified Contract.

In consideration of the prior and final payments made and all payments made for authorized changes, the Contractor releases and forever discharges the Owner from any and all obligations and liabilities arising by virtue of said Contract and authorized changes between the parties hereto, either verbal or in writing, and any and all claims and demands of every kind and character whatsoever against the Owner, arising out of or in any way relating to said Contract, and authorized changes.

This statement is made for the purpose of inducing the Owner to make Final Payment under the terms of the Contract, relying on the truth and statements contained therein.

Dated this 13 day of July, 1989 at Dillon, Montana.

CONTRACTOR:

Coleman Construction, Inc.

By [Signature]

Subscribed and sworn to before me this 14 day of July, 1989.

(SEAL)

[Signature]  
Notary Public for the State of Montana

Residing at Dillon  
My commission expires April 22, 1991



PAY REQUEST NO. 5  
(FINAL PAY REQUEST)

FROM: June 11, 1989

TO: July 7, 1989

PROJECT NAME: Hazardous Mine Opening Project - Phase 22

LOCATION: Beaverhead County, Montana

PROJECT NO.: Mont A/E 88-46-106

NAME OF CONTRACTOR: Coleman Const.

ADDRESS: 2600 Webster Lane  
Dillon, MT 59725

---

SUMMARY OR PROJECT STATUS

Amount of Original Contract	\$218,570.00
Amount of Approved Change Order(s)	103,215.30
TOTAL CONTRACT AMOUNT	321,785.30
Contract Time Used to Date	124 Days
Percentage of Contract Time Used	93%
Percentage of Contract Amount Earned	100%

---

Original Contract Amount Completed	\$224,207.50
Change Order(s) Amount Completed	97,577.80
Amount for Materials on Site	-0-
TOTAL To Date	\$321,785.30
Times 90% =	289,606.77
TOTAL AMOUNT Earned To Date	\$289,606.77
Less Previous Amount Earned	244,451.25
Plus Retainage for Contract Items 100% Complete	32,178.53
Amount Payable This Period	77,334.05
Less 1% Gross Receipts Tax	773.34
TOTAL DUE CONTRACTOR THIS PERIOD	\$76,560.71

---

Requested By: Coleman Const. *Fred K. Coleman* Date: 7/12/89  
(Contractor)

Checked By: Chen-Northern, Inc. *Jeremiah B. Brusse* Date: 7/12/89  
(Engineer)

Approved By: Department of State Lands *Tammy Marshall* Date: 7/25/89  
Abandoned Mine Reclamation Bureau (Owner)





PAY REQUEST NO. 5

NORTHERN ENGINEERING AND TESTING, INC.

PROJECT: Hazardous Mine Opening Project  
Phase 22

MONT A/E 88-46-106

ITEMIZATION OF QUANTITIES AND COSTS

ITEM NO.	DESCRIPTION	ESTIMATED PLAN QUANTITY	UNIT BID PRICE	UNITS OF WORK COMPLETED THIS REQUEST	UNITS OF WORK COMPLETED TO DATE	TOTAL COST OF COMPLETED WORK
1	Mobilization	1.0 LS	8000.00	-0-	1.0	8,000.00
2	Backfilling Mine Openings	3150.0 CY	10.00	350	5082	50,820.00
3	Blasting/Collapsing Openings	8 EA	300.00	8	8	2,400.00
4	Adit and Shaft Culverts	20 EA	1500.00	2	19	28,500.00
5	Cable Net Mine Closure	18 EA	600.00	1	6	3,600.00
6	Steel Grate Systems	45 EA	2710.00	1	42	113,820.00
6a	Hauled		903.33	-0-		
6b	Installed w/o concrete		1,806.67	-0-		
7	Masonry Adit Doors	2 EA	1200.00	1	1	1,200.00
8	Attaching Owner-Provided Signs	34 EA	30.00	13	19	570.00
9	Farm Fence	1600 LF	5.00	1712	2559.5	12,797.50
10	Miscellaneous Site Work	1.0 LS	2500.00	1.0	1.0	<u>2,500.00</u>
TOTAL						224,207.50



# PAY REQUEST NO. 5

## APPROVED CHANGE ORDERS NORTHERN ENGINEERING AND TESTING, INC.

PROJECT: Hazardous Mine Opening Project  
Phase 22

MONT A/E 88-46-106

### ITEMIZATION OF QUANTITIES AND COSTS

ITEM NO.	DESCRIPTION	ESTIMATED PLAN QUANTITY	UNIT BID PRICE	UNITS OF WORK COMPLETED THIS REQUEST	UNITS OF WORK COMPLETED TO DATE	TOTAL COST OF COMPLETED WORK
1	Mobilization					
2	Backfilling Mine Openings		10.00			
	Change Order No. 2	63		-0-	63	630.00
	Change Order No. 6	979		-0-	979	9,790.00
	Change Order No. 7	522		522	522	5,220.00
3	Blasting/Collapsing Openings		300.00			
	Change Order No. 7	7		7	7	2,100.00
4	Adit and Shaft Culverts		1500.00			
	Change Order No. 2	1*	1300.00	-0-	1	1,300.00
	Change Order No. 5	3*		-0-	3	4,300.00
	Change Order No. 6	18		-0-	17	25,500.00
	Change Order No. 7	8		8	8	12,000.00
5	Cable Net Mine Closure		600.00			
6	Steel Grate Systems		2710.00			
	Change Order No. 1	1 plus fabrication		-0-	1	3,450.00
	Change Order No. 2	1		-0-	1	2,710.00
	Change Order No. 5	1		-0-	1	2,710.00
	Change Order No. 6	3 plus 2 fabrications		-0-	3	10,230.00
	Change Order No. 7	0 plus 6 fabrications		6	6	3,477.80





# PAY REQUEST NO. 5

## APPROVED CHANGE ORDERS (Cont.) NORTHERN ENGINEERING AND TESTING, INC.

PROJECT: Hazardous Mine Opening Project  
Phase 22

MONT A/E 88-46-106

### ITEMIZATION OF QUANTITIES AND COSTS

ITEM NO.	DESCRIPTION	ESTIMATED PLAN QUANTITY	UNIT BID PRICE	UNITS OF WORK COMPLETED THIS REQUEST	UNITS OF WORK COMPLETED TO DATE	TOTAL COST OF COMPLETED WORK
7	Masonry Adit Doors		1200.00			
	Change Order No. 5	1		-0-	-0-	1,200.00
8	Attaching Owner-Provided Signs		30.00			
	Change Order No. 1	8		3	-0-	90.00
	Change Order No. 3	4		2	-0-	60.00
	Change Order No. 4	4		2	-0-	60.00
	Change Order No. 5	4		2	-0-	60.00
	Change Order No. 6	20		16	-0-	480.00
	Change Order No. 7	4		4	4	120.00
9	Farm Fence		5.00			
	Change Order No. 1	200		-0-	208	1,040.00
	Change Order No. 3	134		-0-	134	670.00
	Change Order No. 4	146		-0-	146	730.00
	Change Order No. 5	210		-0-	227	1,135.00
	Change Order No. 6	910		-0-	1435	7,175.00
	Change Order No. 7	248		248	248	1,240.00
10	Miscellaneous Site Work					
	Change Order No. 6	1.0	100.00	1	1	100.00
	TOTAL					97,577.80









## SECTION II

### 2.12 CHANGE ORDER

Order No. 1

Date: October 18, 1988

Agreement Date: August 25, 1988

NAME OF PROJECT: Hazardous Mine Opening Project Phase 22

OWNER: Montana Department of State Lands

CONTRACTOR: Coleman Construction, Inc.

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MATERIALS	LABOR	EQUIPMENT	MISCELLANEOUS	TOTAL UNIT COST	
1	Argenta Mine District Jack Mine	Farm Fence - 120 LF				5.00	600.00
		(4) Hazard Signs				30.00	120.00
2	Argenta Mine District Madison No. 22A	Farm Fence - 80 LF				5.00	400.00
		(4) Hazard Signs				30.00	120.00
3	Ermont Mining District	Shaft - fabricated on site \$740.00 + \$2710					<u>3450.00</u>

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISCELLANEOUS	_____
OVERHEAD & PROFIT @ _____ %	_____
GRAND TOTAL - THIS CHANGE ORDER	<u>\$4690.00</u>

Original Contract Price \$218,570.00

Current Contract Price Adjusted by Previous Order + 1,905.00

Cost This Change Order (+ or -) + 4,640.00 4690.00

New Contract Price Including This Change Order \$225,165.00

SECTION II

The completion date as set forth in the Contract Documents shall be increased by (10) ten calendar days.

The date for completion of all work will be January 6, 1989.

Description and Justification for Change:

1. Jack Mine is not deep enough to meet the criteria required for steel grate installation, but is still a hazardous opening.
2. Madison No. 22A is an additional shaft opening found during construction approximately adjacent to No. 22. Per your suggestion, we recommend fencing the opening.
3. Ermont District - Additional shaft identified during construction approximately at the diversion dam. Colemans original price to build grate onsite was \$840.00. After investigation into the cost analysis the price was negotiated to \$740.00 plus \$2710.00 for installation. Site layout required onsite fabrication.

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SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agrees that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by \_\_\_\_\_ (\$ \_\_\_\_\_) (100% of the Change Order amount) and the penalty of the application Payment Bond or Bonds is hereby increased by \_\_\_\_\_ (\$ \_\_\_\_\_) (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

By: \_\_\_\_\_  
(Seal)

Recommended by: Jeremiah B. Bowser, Engineer

Accepted by: Frank P. Coleman, Contractor

Approved by: Richard J. [Signature], Owner CLB

## SECTION II

### 2.12 CHANGE ORDER

Order No. 2

Date: October 10, 1988

Agreement Date: August 25, 1988

NAME OF PROJECT: Hazardous Mine Openings - Beaverhead County, Montana

Phase 22 Mont. A/E 88-46-106

OWNER: Department of State Lands

CONTRACTOR: Coleman Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MATERIALS	LABOR	EQUIPMENT	MISCELLANEOUS	TOTAL UNIT COST	
	Polaris Mining District						
	Opening No. Reclamation Alternative						
- 1	Shaft H' 10' x 10' grate					2710.00	2710.00
- 2	Adit H" Backfill 30 cy					10.00	300.00
3	Adit 1' Culvert 1500 - 200.00 (Negotiated)					1300.00	1300.00
- 4	Shaft 1" Backfill 33cy					10.00	330.00

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISCELLANEOUS

OVERHEAD & PROFIT @ \_\_\_\_\_ %

GRAND TOTAL - THIS CHANGE ORDER

\$4640.00

Original Contract Price \$218,570.00

Current Contract Price Adjusted by Previous Order 7,275.00

Cost This Change Order (+ or -) + 4,640.00

New Contract Price Including This Change Order \$230,485.00 -

SECTION II

The completion date as set forth in the Contract Documents shall be increased by (2) two calendar days.

The date for completion of all work will be January 8, 1989.

Description and Justification for Change:

1. These hazardous openings were identified during construction in the Polaris Mining District, Silver King Site. Landowner was identified and reclamation options were authorized by landowner.

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SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agrees that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by (\$ \_\_\_\_\_) (100% of the Change Order amount) and the penalty of the application Payment Bond or Bonds is hereby increased by (\$ \_\_\_\_\_) (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

By: \_\_\_\_\_

(Seal)

Recommended by: Jeremiah B. Broussard, Engineer

Accepted by: David L. Collier, Contractor

Approved by: Richard 2 Jr., Owner



## SECTION II

### 2.12 CHANGE ORDER

Order No. 3

Date: November 11, 1988

Agreement Date: August 25, 1988

NAME OF PROJECT: Hazardous Mine Opening Project Phase 22

OWNER: Montana Department of State Lands

CONTRACTOR: Coleman Construction, Inc.

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MATERIALS	LABOR	EQUIPMENT	MISCELLANEOUS	TOTAL UNIT COST	
1	Blue Wing District Silver Buckle Site Additional shaft (4x12x15) Fence (134 ft) - Signs (4 ea)					5.00 30.00	670.00 120.00

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISCELLANEOUS	_____
OVERHEAD & PROFIT @ _____ %	_____
GRAND TOTAL - THIS CHANGE ORDER	<u>\$ 790.00</u>

Original Contract Price	<u>\$218,570.00</u>
Current Contract Price Adjusted by Previous Order	<u>230,485.00</u>
Cost This Change Order (+ or -)	<u>+ 790.00</u>
New Contract Price Including This Change Order	<u>\$231,275.00</u>

SECTION II

The completion date as set forth in the Contract Documents shall be increased by (1) one calendar day.

The date for completion of all work will be January 9, 1989.

Description and Justification for Change:

1. This hazardous mine opening was identified during construction in the Blue Wing District. Landowner was identified and authorization was obtained from owner for securing shaft with fence.

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SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agrees that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by (\$ \_\_\_\_\_) (100% of the Change Order amount) and the penalty of the application Payment Bond or Bonds is hereby increased by (\$ \_\_\_\_\_) (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

By: \_\_\_\_\_

(Seal)

Recommended by: Jeremiah B. Bowser, Engineer

Accepted by: [Signature], Contractor

Approved by: [Signature], Owner

SECTION II

2.12 CHANGE ORDER

**RECEIVED**

DEC 23 1988

STATE LANDS

Order No. 4

Date: November 15, 1988

Agreement Date: August 25, 1988

NAME OF PROJECT: Hazardous Mine Openings - Beaverhead County, Montana

Phase 22 Mont. A/E 88-46-106

OWNER: Department of State Lands

CONTRACTOR: Coleman Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MATERIALS	LABOR	EQUIPMENT	MISCELLANEOUS	TOTAL UNIT COST	
1	Blue Wing District, Opening No. 26A Construct Fence (145LF) Install Signs (4)	30.00				5.00	730.00 120.00

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISCELLANEOUS	_____
OVERHEAD & PROFIT @ _____ %	_____
GRAND TOTAL - THIS CHANGE ORDER	<u>\$ 850.00</u>

Original Contract Price \$218,570.00

Current Contract Price Adjusted by Previous Order 233,768.00

Cost This Change Order (+ or -) + 850.00

New Contract Price Including This Change Order \$234,618.00

SECTION II

The completion date as set forth in the Contract Documents shall be increased by (1) one calendar days.

The date for completion of all work will be January 10, 1989.

Description and Justification for Change:

1. An additional shaft was located during construction activity. Fencing was determined to be the preferred closure option.

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SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agrees that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by (\$\_\_\_\_\_) (100% of the Change Order amount) and the penalty of the application Payment Bond or Bonds is hereby increased by (\$\_\_\_\_\_) (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

By: \_\_\_\_\_

(Seal)

Recommended by: Jeremiah B. Brouser, Engineer

Accepted by: Donald Tolman, Contractor

Approved by: Lester McNally, Owner



MAY 31 1989

STATE LANDS

SECTION II

2.12 CHANGE ORDER

Order No. 5

Date: April 26, 1989

Agreement Date: November 15, 1988

NAME OF PROJECT: Hazardous Mine Openings - Beaverhead County, Montana

Phase 22 Mont. A/E 88-46-106

OWNER: Department of State Lands

CONTRACTOR: Coleman Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MATERIALS	LABOR	EQUIPMENT	MISCELLANEOUS	TOTAL UNIT COST	
	WORK DIRECTIVE NO. 1						
	- Shaft Culvert (Delete 1)					1500.00	<1500.00>
	- Farm Fence (add 210 LF)					5.00	1050.00
	- Hazard Signs (add 4)					30.00	120.00
	WORK DIRECTIVE NO. 2						
	- Backfill (Delete 140 cy)					10.00	<1400.00>
	- Steel Grate System (Add 1)					2710.00	2710.00
	WORK DIRECTIVE NO. 3						
	- Cable Net (Delete 1)					600.00	<600.00>
	- Adit Culvert (Add 1)					1500.00	1500.00
	WORK DIRECTIVE NO. 4						
	- Farm Fence (Delete 100 LF)					5.00	<500.00>
	- Hazard Signs (Delete 4)					30.00	<120.00>
	- Culvert (Add 1)					1300.00	1300.00
	WORK DIRECTIVE NO. 5						
	- Backfill (Delete 20.7 cy)					10.00	<207.00>
	- Adit Door (Add 1)					1200.00	1200.00
	- Culvert (Add 1)					1500.00	1500.00

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISCELLANEOUS	\$
OVERHEAD & PROFIT @ _____ %	
GRAND TOTAL - THIS CHANGE ORDER	\$ 5053.00

Original Contract Price	\$218,570.00
Current Contract Price Adjusted by Previous Order	229,565.00
Cost This Change Order (+ or -)	+ 5,053.00
New Contract Price Including This Change Order	\$234,618.00

## SECTION II

The completion date as set forth in the Contract Documents shall be increased by (17) seventeen calendar days.

The date for completion of all work will be June 23, 1989.

### Description and Justification for Change:

1. Argenta Mining District, SW Section 8, No. 43: Install 210 Linear feet of farm fence and 4 hazard signs. Delete installation of shaft culvert. The installation of a culvert would block access to a drift leading from the shaft. See Work Directive No. 1 dated September 30, 1988.
2. Argenta Mining District Ferdinand Site No. 7: Delete 140 cy of backfill and install 1 - 10' x 10' steel grate system. Rudy Hygren claims the 240' shaft is used as an air vent for other mine workings. See Work Directive No. 2 dated September 30, 1988.
3. Baldy Mountain Mining District, Durham Bull No. 9: Delete 1 cable net and install 1 adit culvert. Entry to adit consists of sandy silty clay with gravels, therefore, installation of rock bolts is not feasible. See Work Directive No. 3 dated October 3, 1988.
4. Polaris Mining District, BN Opening: Install culvert and delete installation of 100 LF of farm fence and 4 hazard signs. Installation of a CMP is feasible and would further eliminate danger at opening. See Work Directive No. 4 dated October 10, 1988.
5. Blue Wing District, Old Charter Oak Site: Change opening No. 58 from backfill to an adit door, and change opening No. 59 from backfill to a CMP. Changes are requested by recent claimant to maintain access. See Work Directive No. 5 dated November 10, 1988.

## SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agrees that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by FIVE THOUSAND FIFTY THREE & NO/100 DOLLARS (\$ 5,053.00) (100% of the Change Order amount) and the penalty of the application Payment Bond or Bonds is hereby increased by FIVE THOUSAND FIFTY THREE DOLLARS (\$ 5,053.00) (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

FIDELITY & GUARANTY  
INSURANCE COMPANY

By: Elaine Gray  
ELAINE GRAY, (Seal) ATTORNEY-IN-FACT

Recommended by: Jeremiah B. Bowser, Engineer

Accepted by: [Signature], Contractor

Approved by: Susan McAnally, Owner

RECEIVED

MAY 31 1989

STATE LANDS

SECTION II

2.12 CHANGE ORDER

Order No. 6

Date: May 12, 1989

Agreement Date: November 15, 1988

NAME OF PROJECT: Hazardous Mine Openings - Beaverhead County, Montana

Phase 22 Mont. A/E 88-46-106

OWNER: Department of State Lands

CONTRACTOR: Coleman Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL UNIT COST	TOTAL COST
		MATERIALS	LABOR	EQUIPMENT	MISCELLANEOUS			
<b>BLUE WING</b>								
1	Construct & Install 16' x 16' grate (1 ea) Cotton Tail No. 7A				1050.00	2710.00	3760.00	
2	160 LF Farm Fence					5.00	800.00	
3	Hazard Signs (4 ea) Cottontail No. 6 & 7					30.00	120.00	
4	Install Adit Culvert (2 ea) Cottontail No.s 4 & 5					1500.00	3000.00	
5	750 LF Farm Fence					5.00	3750.00	
6	Hazard Signs (16 ea) Huron Nos. 23A, 23B, 34A, 34B, 21A, 30A, 18A, 39					30.00	480.00	
<b>NEW DEPARTURE</b>								
1	Backfill 979 cy Nos. 1,3,12,14, 18,20,24					10.00	9790.00	
2	Install adit/shaft culverts (16 ea) 2,4,5,6,8,9,10,11,12,13,15,16, 17,19,22,23					1500.00	24000.00	
3	Install steel grates (2 ea)					2710.00	5420.00	
4	Miscellaneous site work(seed. fert)					Lumpsum	100.00	
<b>BANNACK</b>								
1	Construct 16 ' x 16' grate Excelsior shaft				1050.00		1050.00	

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISCELLANEOUS	\$
OVERHEAD & PROFIT @ <u>included</u> %	
GRAND TOTAL - THIS CHANGE ORDER	\$52,270.00
Original Contract Price	\$218,570.00

Current Contract Price Adjusted by Previous Order	234,618.00
Cost This Change Order (+ or -)	+ 52,270.00
New Contract Price Including This Change Order	\$286,888.00

\* Assuming owner furnished grates



## SECTION II

The completion date as set forth in the Contract Documents shall be increased by (18) eighteen calendar days.

The date for completion of all work will be July 11, 1989.

### Description and Justification for Change:

Blue Wing: Additional mine openings located in work area requiring accessing mine closures as specified by landowner. Also vertical shafts of depths less than twenty-five feet requiring fencing for protection against accidental entry. Fencing was considered inappropriate at time of initial site evaluation.

New Departure: Addition of sites dropped from original bid package due to lack of landowner consent. Permission recently granted to install accessing mine seals and backfill 25 openings threatening public safety.

Bannack Specialty grate required on Excelsior shaft to avoid disturbing headframe associated with mine opening. No disturbance of historic features is allowed to accomplish reclamation construction.

## SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agrees that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by FIFTY TWO THOUSAND TWO HUNDRED SEVENTY AND NO/100 DOLLARS (\$ 52,270.00 ) (100% of the Change Order amount) and the penalty of the application Payment Bond or Bonds is hereby increased by FIFTY TWO THOUSAND TWO HUNDRED SEVENTY AND NO/100 (\$ 52,270.00 ) (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

FIDELITY AND GUARANTY  
INSURANCE COMPANY

By: Elaine Gray  
ELAINE GRAY, (Seal) ATTORNEY-IN-FACT

Recommended by: Jeremiah B. Brouse, Engineer

Accepted by: Paul M. Brown, Contractor

Approved by: Susan McAnally, Owner



## 2.12 CHANGE ORDER

Order No. 7Date: June 12, 1989Agreement Date: November 15, 1989NAME OF PROJECT: Hazardous Mine Openings - Beaverhead Co. MontanaPhase 22, Mont A/E 88-46-106OWNER: Department of State LandsCONTRACTOR: Coleman Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MATERIALS	LABOR	EQUIPMENT	MISCELLANEOUS	TOTAL UNIT COST	
	(SEE ATTACHMENT A)						

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISCELLANEOUS	
OVERHEAD & PROFIT @ <u>Included</u> %	
GRAND TOTAL - THIS CHANGE ORDER	<u>\$ 8,330.30</u>

Original Contract Price	<u>\$ 218,570.00</u>
Current Contract Price Adjusted by Previous Order	<u>\$ 286,863.00</u>
Cost This Change Order (+ or -)	<u>+ 8,330.30</u>
New Contract Price Including This Change Order	<u>\$295,193.30</u>

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decrease) by \_\_\_\_\_ calendar days.

The date for completion of all work will be \_\_\_\_\_.

Description and Justification for Change:

1.

SEE ATTACHMENT B

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SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agrees that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by EIGHT THOUSAND THREE HUNDRED THIRTY 30/100 (\$ 8,330.30) (100% of the Change Order amount) and the penalty of the application Payment Bond or Bonds is hereby increased by EIGHT THOUSAND THREE HUNDRED THIRTY AND 30/100 DOLLARS (\$ 8,330.30) (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

FIDELITY & GUARANTY  
INSURANCE COMPANY

By: Elaine Gray  
ELAINE GRAY, (Seal) ATTORNEY-IN-FACT

Recommended by: Jeremiah B. Emmer, Engineer

Accepted by: Paul J. Emmer, Contractor

Approved by: Sam Marshall, Owner

**HAZARDOUS MINE OPENING - PHASE 22**  
**MONT A/E 88-46-106**  
**CHANGE ORDER NO. 7**

**ATTACHMENT A**

<u>Item No.</u>	<u>Description</u>	<u>Unit Cost</u>	<u>Total Cost</u>
<u>Argenta District</u>			
1.	Rosemont #33A Add Culvert	\$ 1500.00	\$ 1500.00
2.	Stinson #40 Add Culvert	1500.00	1500.00
3.	Goodview #14 Delete Cable Net	<600.00>	<600.00>
4.	Add Culvert	1500.00	1500.00
5.	Long John #20 Delete Cable Net	<600.00>	<600.00>
6.	Add Backfill 37 cy	10.00	370.00
7.	Long John #21 Delete Cable Net	<600.00>	<600.00>
8.	Add Backfill 47 cy	10.00	470.00
9.	Long John #21A Add Backfill 23 cy	10.00	230.00
10.	Madison #22A Add Fence 12 lf	5.00	60.00
11.	Delete 3 Owner-Provided Signs	30.00	<90.00>
12.	Jack #9A Delete Fence 4 lf	5.00	<20.00>
13.	Delete 2 Owner-Provided Signs	30.00	<60.00>
14.	SW Section 8 #43 Add Fence 17 lf	5.00	85.00
15.	Delete 2 Owner-Provided Signs	30.00	<60.00>
16.	NE Section 24 #27 Delete Steel Grate	2710.00	<2710.00>
17.	Humboldt Mtn #18 Delete Steel Grate	2710.00	<2710.00>
18.	Starlight #36 & #37 Add Fence 175 lf	5.00	875.00
19.	Delete 4 Owner-Provided Signs	30.00	<120.00>
<u>Baldy Mountain District</u>			
1.	Cable #2 Delete Cable Net	<600.00>	<600.00>
2.	Add Culvert	1500.00	1500.00
<u>Bannack District</u>			
1.	Arcata Delete Backfill 9 cy	10.00	<90.00>
2.	Bannack C-1,C-2,C-3,C-4 Add Blast, 4 sites	300.00	1200.00
3.	Beaverhead #D Delete Cable Net	600.00	<600.00>
4.	Beaverhead #E Delete Cable Net	600.00	<600.00>
5.	Bon Accord #G Delete Backfill 20 cy	10.00	<200.00>
6.	Excelsior #K Delete Cable Net	600.00	<600.00>
7.	Add Culvert	1500.00	1500.00
8.	Gold Bug #N Delete Cable Net	600.00	<600.00>
9.	Golden Ledge Delete Adit Door	1200.00	<1200.00>
10.	Add Culvert	1500.00	1500.00
11.	Hendricks R-1 & R-2 Add Blast, 2 sites	300.00	600.00
12.	SE Section 5 #Z Delete Backfill 15 cy	10.00	<150.00>
13.	#AA Delete Backfill 15 cy	10.00	<150.00>
14.	#BB Delete Backfill 15 cy	10.00	<150.00>
15.	Southmont #CC Delete Backfill 25 cy	10.00	<250.00>
16.	#DD Delete Backfill 15 cy	10.00	<150.00>
17.	SW Section 5 (EE,FF,GG HH,II,JJ,KK) Delete Backfill 364 cy	10.00	<3640.00>





HAZARDOUS MINE OPENING - PHASE 22  
MONT A/E 88-46-106  
CHANGE ORDER NO. 7

ATTACHMENT B

Description and Justification for Change

Argenta District

Additional mine openings located in work area requiring accessing mine closures as specified by landowner. Cable net closures deleted due to unstable conditions. Long John sites were identified and authorization was obtained from landowner (USFS) to backfill mine openings.

Baldy Mountain District

No solid rock at or near entry to provide for the installation of rock bolts and cable net closure.

Bannack District

Numerous sites dropped from the contract at the direction of Department of State Lands Representative. Cable net closures deleted due to unstable conditions. Additional mine openings located in work area were identified and authorization was obtained from landowner (Mt. FW&P) to blast and collapse adits. SW section 5 site SS was fenced at direction of DSL representative.

Blue Wing District

Additional mine opening located in work area was identified and authorization obtained from claimant to backfill site. Additional steel grate panels were required at Bob Ingersoll #3 and #4 to adequately obstruct mine opening.

New Departure

Steel grates constructed by contractor at direction of DSL.

Note: Several sites accounted of in this change order involve changes in the quantities estimated for original work and on previous change orders, ie. New Departure District; Blue Dot, Manganese, Tree Hole and Upper Stapleton were estimated on Change Order No. 6 for 979 cy of backfill and the actual quantity placed was 1071 cy.



## 2.12 CHANGE ORDER

Order No. 8Date: July 6, 1989Agreement Date: August 25, 1988NAME OF PROJECT: Hazardous Mine Openings - Beaverhead Co. Montana

Phase 22, Mont A/E 88-46-106

OWNER: Department of State LandsCONTRACTOR: Coleman Construction

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MATERIALS	LABOR	EQUIPMENT	MISCELLANEOUS	TOTAL UNIT COST	
1.	Add: 2658.7 c.y. backfill <u>Polaris District</u>					\$10.00	26587.00
2.	Add: 1 L.F. Farm Fence					5.00	5.00

TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISCELLANEOUS	
OVERHEAD & PROFIT @ <u>Included</u> %	
GRAND TOTAL - THIS CHANGE ORDER	<u>\$ 26,592.00</u>

Original Contract Price \$ 218,570.00Current Contract Price Adjusted by Previous Order \$ 295,193.30Cost This Change Order (+ or -) + 26,592.00New Contract Price Including This Change Order \$321,785.30

The completion date as set forth in the Contract Documents shall be (unchanged, increased, decrease) by \_\_\_\_\_ calendar days.

The date for completion of all work will be June 20, 1989.

Description and Justification for Change:

1. Backfill: Original estimated amount of backfill was exceeded by 2658.7 c.y. due to variations in opening dimensions throughout the project;  $5082 - (3150 - 726.7) = 2658.7$  c.y. (Where 5082 cy = Backfill completed, 3150 cy = Original estimated quantity, and 726.7 cy = Backfill deleted by change orders).
2. Change Order #5 (Work Directive #4) Polaris District: 100 L.F. Farm Fence was erroneously deleted. Correct amount for deletion is 99 L.F. Farm Fence. Total amount of farm fence installed is 4956.5 L.F.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agrees that on or after execution of this consent, the penalty of the applicable Performance Bond or Bonds is hereby increased by TWENTY SIX THOUSAND FIVE HUNDRED NINETY TWO NO/100 (\$ 26,592.00) (100% of the Change Order amount) and the penalty of the application Payment Bond or Bonds is hereby increased by TWENTY SIX THOUSAND FIVE HUNDRED NINETY TWO NO/100 (\$ 26,592.00) (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA  
RESIDENT AGENT

SURETY

FIDELITY & GUARANTY  
INSURANCE COMPANY

By: Elaine Gray  
ELAINE GRAY, (Seal) ATTORNEY-IN-FACT

Recommended by: Jeremiah B. Brouser, Engineer

Accepted by: Paul J. Tolson, Contractor

Approved by: Frank J. Marshall, Owner



## SECTION II

### 2.11 WORK DIRECTIVE CHANGE

(Instructions on Reverse Side)

No. 1

PROJECT: Hazardous Mine Openings

DATE OF ISSUANCE: 9/30/88

OWNER:  
(Name, Address) Phase 22  
Montana Department of State Lands  
Attn: Mr. Ed Gensler  
Capitol Station  
Helena, MT

CONTRACTOR:  
Coleman Construction, Inc.  
2000 Webster Lane  
Dillon, MT 59725

OWNER'S PROJECT NO. Mont A/E 88-46-106

ENGINEER: Northern Engineering & Testing

CONTRACT FOR:  
Redemption of HMO's

ENGINEER'S PROJECT NO. 88-3005.C

You are directed to proceed promptly with the following change(s):

Argenta Mining District, SW Section 8, No. 43  
Description: Change from Shaft Culvert to Farm Fence and Signs.

Purpose of Work Directive Change: Installation of culverts (210 LF) would block off (4)  
access to a drift landing from the shaft.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining change in Contract Price:

☐ Time and materials Culvert \$1500.00  
Fence 1815.00  
☒ Unit Price Sign 120.00  
Decrease 500.00  
☐ Cost plus fixed fee 305.00

☐ Other \_\_\_\_\_

Method of determining change in Contract Price:

☐ Contractor's records  
☒ Engineer's records  
☐ Other \_\_\_\_\_

Estimated increase (decrease) in Contract Price: \$ Decrease 305.00  
If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in Contract Price: \$ \_\_\_\_\_  
If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

RECOMMENDED BY: James B. Bower  
Engineer

AUTHORIZED BY: \_\_\_\_\_  
Owner

ACCEPTED BY: Frank T. Tolson  
Contractor



SECTION II

2.11 WORK DIRECTIVE CHANGE

(Instructions on Reverse Side)

No. 2

PROJECT: Hazardous Mine Openings Phase 22 DATE OF ISSUANCE: 9/30/88

OWNER: Montana Dept. of State Lands  
(Name, Address) Attn: Mr. Ed Sensler  
Capitol Station  
Helena, MT

CONTRACTOR: Coleman Construction, Inc.  
2600 Webster Lane  
Dillon, MT 59725

OWNER'S PROJECT NO. Mont A/E 88-46-106

ENGINEER: Northern Engineering & Testing

CONTRACT FOR: Reclamation of HMO's

ENGINEER'S PROJECT NO. 88-3005.C

You are directed to proceed promptly with the following change(s):

Argenta Mining District, Ferdinand Site, No. 7  
Description:

Change from backfill to grate (10x10)  
Purpose of Work Directive Change:

Rudy Nygren claim the 240' shaft is used as air vent of other  
Attachments: (list documents supporting change) mine workings.

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining change in Contract Price:

☐ Time and materials

☒ Unit Price

☐ Cost plus fixed fee

☐ Other \* Estimated

Method of determining change in Contract Price:

☐ Contractor's records

☒ Engineer's records

☐ Other

Estimated increase (decrease) in Contract Price: \$ 1310.00.  
If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

Estimated increase (decrease) in Contract Price: \$ \_\_\_\_\_.  
If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

RECOMMENDED BY: James B. Bower

Engineer

AUTHORIZED BY: \_\_\_\_\_

Owner

ACCEPTED BY: [Signature]

Contractor





## SECTION II

### 2.11 WORK DIRECTIVE CHANGE

(Instructions on Reverse Side)

No. 3

PROJECT: *Hazardous mine openings*  
*Phase 22*

DATE OF ISSUANCE: *10/3/88*

OWNER: *Montana Department of State Lands*  
(Name, *ATTN: Mr. Ed Gensler*  
Address) *Capitol Station*  
*Helena, MT.*

OWNER'S PROJECT NO. *Mont A/E 88-46-106*

CONTRACTOR: *Coleman Construction, Inc.*  
*2600 Webster Lane*  
*Dillon, MT. 59725*

ENGINEER: *Northern Engineering & Testing*

CONTRACT FOR: *Reclamation of HMA's*

ENGINEER'S PROJECT NO. *BB-3005-C*

You are directed to proceed promptly with the following change(s):

*BOLDY MOUNTAIN MINING District, Durham Bull, NO. 9*  
Description: *Change from Cable NET to Adit Culvert*

Purpose of Work Directive Change: *Entry consists of sandy silty clay w/ gravel; NO SOLID ROCK atop nor entry to provide for the installation of rock bolts.*

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining change in Contract Price:

☐ Time and materials *CULVERT \$1500.00*

☒ Unit Price *INCREASE \$900.00*

☐ Cost plus fixed fee

☐ Other \_\_\_\_\_

Method of determining change in Contract Price:

☐ Contractor's records

☒ Engineer's records

☐ Other \_\_\_\_\_

Estimated increase (decrease) in Contract Price: \$ *900.00*.  
If the change involves an increase, the estimated amount is not to be exceeded without further authorization.

*Jeremiah B. Brouse*

RECOMMENDED BY: *Jeremiah Brouse*  
Engineer

Estimated increase (decrease) in Contract Time: \_\_\_\_\_ days. If the change involves an increase, the estimated time is not to be exceeded without further authorization.

AUTHORIZED BY: \_\_\_\_\_  
Owner

ACCEPTED BY: *Frank L. Brown*  
Contractor



SECTION II

2.11 WORK DIRECTIVE CHANGE

(Instructions on Reverse Side)

No. 4

PROJECT: Hazardous Mine Openings  
Project, Phase 22

DATE OF ISSUANCE: 10/10/88

OWNER: Montana Department of State Lands  
Attn: Mr. Ed Gensler  
Capitol Station  
Helena, MT 59620

CONTRACTOR:  
Coleman Construction  
2600 Webster Lane  
Dillon, MT 59725

OWNER'S PROJECT NO. 88-46-106

ENGINEER: Northern Engineering & Testing

CONTRACT FOR:  
Reclamation of Hazardous Mine Openings

ENGINEER'S PROJECT NO. 88-3005.C

You are directed to proceed promptly with the following change(s):

Description: Polaris Mining District: Silver King Site; Bid opening J. Change from fence to culvert.

Purpose of Work Directive Change: Installation of a CMP is feasible, and would further eliminate danger at opening.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining change in  
Contract Price: Fence=100 Lin.ft

Method of determining change in  
Contract Price:

☐ Time and materials @500.00

☐ Contractor's records

☒ Unit Price Fence=\$500.00  
Signs=4x30.00=\$120.00

☐ Engineer's records

☐ Cost plus fixed fee Fence=\$620.00  
CMP=\$1500 less \$200

☐ Other \_\_\_\_\_

☐ Other \_\_\_\_\_ \$1300.00  
-620.00  
\$680.00

Estimated increase in  
Contract Price: \$ \$680.00  
If the change involves an increase,  
the estimated amount is not to be  
exceeded without further authorization.

Estimated increase (decrease) in  
Contract Time: \_\_\_\_\_ days. If  
the change involves an increase, the  
estimated time is not to be exceeded  
without further authorization.

RECOMMENDED BY: Jeremiah B. Bousier  
Engineer

AUTHORIZED BY: Richard Z. Fur  
Owner

ACCEPTED BY: [Signature]  
Contractor





SECTION II

2.11 WORK DIRECTIVE CHANGE

(Instructions on Reverse Side)

No. 5

PROJECT: Hazardous Mine Openings  
Project, Phase 22

DATE OF ISSUANCE: 11/10/88

OWNER: Montana Department of State Lands  
Attn: Mr. Ed Gensler  
Capitol Station  
Helena, MT 59620

CONTRACTOR:  
Coleman Construction  
2600 Webster Lane  
Dillon, MT 59725

OWNER'S PROJECT NO. 88-46-106

ENGINEER: Northern Engineering & Testing

CONTRACT FOR:  
Reclamation of Hazardous Mine Openings

ENGINEER'S PROJECT NO. 88-3005.C

You are directed to proceed promptly with the following change(s):

Description: Blue Wing District, Old Charter Oak Site; (1) Change opening 58 to an adit door, (2) change opening 59 to a culvert.

Purpose of Work Directive Change: Requested by recent claimant for maintaining access.

Attachments: (list documents supporting change)

If a claim is made that the above change(s) have affected Contract Price or Contract Time, any claim for a Change Order based thereon will involve one of the following methods of determining the effect of the change(s).

Method of determining change in  
Contract Price:

☐ Time and materials Backfill = 8.9cy + 11.8cy  
@ \$10.00 per cy  
\$207.00  
☒ Unit Price Adit door = \$1,200.00  
Culvert = 1,500.00  
\$2,700.00  
☐ Cost plus fixed fee  
☐ Other \_\_\_\_\_

Method of determining change in  
Contract Price:

☐ Contractor's records  
☐ Engineer's records  
☐ Other \_\_\_\_\_  
\$2,700.00  
- 207.00  
\$2,493.00

Estimated increase in  
Contract Price: \$ \$2,493.00.  
If the change involves an increase,  
the estimated amount is not to be  
exceeded without further authorization.

Estimated increase in Contract Time:  
three (3) days. If the change  
involves an increase, the estimated  
time is not to be exceeded without  
further authorization.

RECOMMENDED BY: \_\_\_\_\_

Engineer

AUTHORIZED BY: \_\_\_\_\_

Owner

ACCEPTED BY: \_\_\_\_\_

Contractor



## APPENDIX C

### SLIDES





## PHASE 22 CONSTRUCTION SLIDE LOG

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
1	9-26-88	Argenta	Albers Gulch #1	Before, 15' East
2	9-26-88	Argenta	Albers Gulch #1	During, 15' East; placing fill with 950 loader
3	9-26-88	Argenta	Albers Gulch #1	During, 15' East, wheel rolling fill with 950 loader
4	9-26-88	Argenta	Albers Gulch #1	After, 15' East
5	9-30-88	Argenta	Amaranth #2	Before, 50' South
6	9-30-88	Argenta	Amaranth #2	Before, 15' South
7	9-30-88	Argenta	Amaranth #2	During, 15' South, preparing site for 16' x 16' grate
8	9-88	Argenta	Amaranth #2	During, 15' South, grate placed
9	10-88	Argenta	Amaranth #2	After, 15' South
10	10-88	Argenta	Amaranth #2	After, 50' South
11	6-26-87	Argenta	Cold Day #3	Before
12	9-26-88	Argenta	Cold Day #3	Before, 10' East
13	9-26-88	Argenta	Cold Day #3	During, 10' East, fill placed with 950 loader
14	9-26-88	Argenta	Cold Day #3	After, 10' East
15	6-16-87	Argenta	Dexter #4	Before
16	9-26-88	Argenta	Dexter #4	Before, 20' West
17	9-26-88	Argenta	Dexter #4	During, 20' West, placing fill w/225 trackhoe
18	9-26-88	Argenta	Dexter #4	After, 20' West
19	6-16-87	Argenta	Dexter #5	Before
20	9-28-88	Argenta	Dexter #5	Before, 10' Northeast
21	9-28-88	Argenta	Dexter #5	During, 10' Northeast, leveling site
22	9-28-88	Argenta	Dexter #5	During, 10' Northeast, 24 x 24 grate placed
23	9-28-88	Argenta	Dexter #5	During, 40' North, grate in place
24	10-13-88	Argenta	Dexter #5	After, 10' Northeast
25	10-13-88	Argenta	Dexter #5	After, 40' North
26	6-25-87	Argenta	Dexter Gulch #6	Before
27	9-26-88	Argenta	Dexter Gulch #6	Before, 15' Northeast
28	9-26-88	Argenta	Dexter Gulch #6	During, 15' Northeast, digging out portal entry w/trac
29	9-26-88	Argenta	Dexter Gulch #6	After, 15' Northeast
30	6-26-87	Argenta	Ferdinand #7	Before
31	6-26-87	Argenta	Ferdinand #7	Before
32	10-12-88	Argenta	Ferdinand #7	Before, 50' North
33	10-12-88	Argenta	Ferdinand #7	Before, 15' North
34	10-12-88	Argenta	Ferdinand #7	During, 15' North, removing headframe
35	10-12-88	Argenta	Ferdinand #7	During, 50' North, timbers removed
36	10-12-88	Argenta	Ferdinand #7	During, 15' North, wooden hatch removed
37	10-12-88	Argenta	Ferdinand #7	After, 15' North, 10' x 10' grate placed
38	10-12-88	Argenta	Ferdinand #7	After, 50' North, 10' x 10' grate placed
39	6-12-87	Argenta	Florence #8	Before
40	9-24-88	Argenta	Florence #8	Before, 25' South of portal entry
41	9-24-88	Argenta	Florence #8	Before, 10' South of portal entry
42	9-24-88	Argenta	Florence #8	During, 25' West, placing fill with 950 loader
43	9-24-88	Argenta	Florence #8	After, 25' South
44	6-12-87	Argenta	Gold Finch #9	Before
45	9-21-88	Argenta	Gold Finch #9	Before, 25' North
46	9-21-88	Argenta	Gold Finch #9	During, 1800' SE, preparing to place grate w/225 trackhoe
47	9-21-88	Argenta	Gold Finch #9	During, 25' North, positioning 24' x 24' grate over opening
48	9-21-88	Argenta	Gold Finch #9	During, 25' North, digging pedestal holes
49	10-23-88	Argenta	Gold Finch #9	After, 25' North
50	10-23-88	Argenta	Gold Finch #9	After, 50' West
51	6-12-87	Argenta	Gold Finch #10	Before



PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
52	9-21-88	Argenta	Gold Finch #10	Before, 25' South
53	10-23-88	Argenta	Gold Finch #10	During, 25' South, site leveled around grate
54	10-23-88	Argenta	Gold Finch #10	After, 35' South, 16' x 16' grate in place
55	6-16-87	Argenta	Golden Era #11	Before
56	9-22-88	Argenta	Golden Era #11	Before, 15' North
57	10-13-88	Argenta	Golden Era #11	During, 15' North, leveling up site
58	10-13-88	Argenta	Golden Era #11	After, 30' North, 16' x 16' grate in place
59	6-25-88	Argenta	Goodview #12	Before
60	9-23-88	Argenta	Goodview #12	Before, 20' West
61	10-14-88	Argenta	Goodview #12	During, 20' West, leveling up site
62	10-14-88	Argenta	Goodview #12	After, 25' North, 16' x 16' grate in place
63	6-25-89	Argenta	Goodview #13	Before
64	9-23-88	Argenta	Goodview #13	Before, 15' Northeast
65	9-23-88	Argenta	Goodview #13	During, 15' Northeast, placing fill
66	9-23-88	Argenta	Goodview #13	After, 15' Northeast (opening #12 in background)
67	6-25-89	Argenta	Goodview #14	Before
68	9-23-88	Argenta	Goodview #14	Before, 25' South
69	9-23-88	Argenta	Goodview #14	During, 15' South, backfill placed where contractor is standing
70	6-89	Argenta	Goodview #14	After
71	6-25-87	Argenta	Goodview #15	Before
72	9-23-88	Argenta	Goodview #15	Before, 20' North
73	9-23-88	Argenta	Goodview #15	Before, 25' South
74	9-23-88	Argenta	Goodview #15	During, 25' South, removing timbers
75	9-23-88	Argenta	Goodview #15	After, 25' South
76	9-23-88	Argenta	Goodview #15	After, 20' North
77	6-25-87	Argenta	Good Friday Gulch #16	Before
78	9-24-88	Argenta	Good Friday Gulch #16	Before, 30' Northwest
79	9-24-88	Argenta	Good Friday Gulch #16	During, 30' Northwest, placing fill with 950 loader
80	9-24-88	Argenta	Good Friday Gulch #16	After, 30' Northwest
81	6-25-87	Argenta	Good Friday Gulch #17	Before, 30' Northwest
82	9-24-88	Argenta	Good Friday Gulch #17	Before, 30' Northwest
83	9-24-88	Argenta	Good Friday Gulch #17	During, 30' Northwest, placing fill with 950 loader
84	9-24-88	Argenta	Good Friday Gulch #17	After, 30' Northwest
85	8-31-87	Argenta	Humbolt Mountain #19	Before
86	9-21-88	Argenta	Humbolt Mountain #19	Before, 20' in front of portal
87	9-25-88	Argenta	Humbolt Mountain #19	Before, 20' in front of portal
88	9-25-88	Argenta	Humbolt Mountain #19	During, preparing to pack 5 sections of CMP to site with horses
89	9-25-88	Argenta	Humbolt Mountain #19	During, 20' in front of portal, placing fill by hand
90	9-25-88	Argenta	Humbolt Mountain #19	After, 20' in front of portal
91	6-89	Argenta	Gold Finch #9A	During
92	6-89	Argenta	Gold Finch #9A	After
93	6-24-87	Argenta	Long John Gulch #20	Before
94	6-89	Argenta	Long John Gulch #20	During
95	6-89	Argenta	Long John Gulch #20	During
96	6-89	Argenta	Long John Gulch #20	After, seeding
97	6-24-87	Argenta	Long John Gulch #21	Before
98	6-89	Argenta	Long John Gulch #21	During
99	6-89	Argenta	Long John Gulch #21	After
100	6-89	Argenta	Long John Gulch #21A	During





PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
101	6-89	Argenta	Long John Gulch #21A	After
102	6-25-87	Argenta	Madison #22	Before
103	9-22-88	Argenta	Madison #22	Before, 20' East
104	9-22-88	Argenta	Madison #22	During, 20' East, leveling site with 225 trackhoe
105	9-22-88	Argenta	Madison #22	After, 20' East, 16' x 16' grate in place
106	6-25-87	Argenta	Madison #23	Before
107	9-23-88	Argenta	Madison #23	Before, 25' North
108	9-27-88	Argenta	Madison #23	During, 25' North, leveling site around grate
109	9-27-88	Argenta	Madison #23	After, 50' North, 16' x 24' grate in place
110	6-89	Argenta	Madison #23	After
111	7-1-87	Argenta	May Day #24	Before
112	9-28-88	Argenta	May Day #24	Before, 15' East
113	9-28-88	Argenta	May Day #24	During, 15' East, removing exposed timbers with 225 trackhoe
114	9-28-88	Argenta	May Day #24	After, 15' East
115	7-1-87	Argenta	May Day #25	Before
116	9-28-88	Argenta	May Day #25	Before, 16' East
117	9-28-88	Argenta	May Day #25	During, at South edge of shaft
118	9-28-88	Argenta	May Day #25	During, 16' East
119	9-28-88	Argenta	May Day #25	During, 16' East, removing exposed timbers
120	9-28-88	Argenta	May Day #25	After, 16' East
121	6-25-89	Argenta	NE Section 24 #26	Before
122	9-23-88	Argenta	NE Section 24 #26	Before, 30' North
123	10-13-88	Argenta	NE Section 24 #26	During, 30' North, welding on plate for anchor bolt
124	10-13-88	Argenta	NE Section 24 #26	During, a typical rock bolt anchor plate
125	10-13-88	Argenta	NE Section 24 #26	During, 27" split set rock bolt
126	10-13-88	Argenta	NE Section 24 #26	During, split set rock bolt in place
127	10-13-88	Argenta	NE Section 24 #26	After, 30' North, 16' x 16' grate in place
128	6-26-87	Argenta	NW Section 29 #28	Before
129	9-26-88	Argenta	NW Section 29 #28	Before, 12' Southeast
130	9-26-88	Argenta	NW Section 29 #28, #28A	Before, 50' Southeast
131	9-26-88	Argenta	NW Section 29 #28A	During, 12' Northwest, placing fill with 950 loader
132	9-26-88	Argenta	NW Section 29 #28, #28A	After, 20' Southeast
133	6-17-87	Argenta	Pilon Ranch #29	Before
134	9-19-88	Argenta	Pilon Ranch #29	Before, 20' North
135	9-19-88	Argenta	Pilon Ranch #29	During, 25' North, leveling site with 225 trackhoe
136	9-19-88	Argenta	Pilon Ranch #29	During, transporting assembled 16' x 16' grate to opening
137	9-20-88	Argenta	Pilon Ranch #29	After, 25' North, 16' x 16' grate in place
138	6-12-89	Argenta	Pilon Ranch #30	Before
139	9-19-88	Argenta	Pilon Ranch #30	Before, 10' North
140	9-20-88	Argenta	Pilon Ranch #30	After, 25' South, 16' x 16' grate in place
141	6-25-87	Argenta	Rosemont #32	Before
142	9-26-88	Argenta	Rosemont #32	Before, 15' East
143	9-26-88	Argenta	Rosemont #32	Before, 4' East
144	10-13-88	Argenta	Rosemont #32	During, 15' East, placing rock in low spots
145	10-13-88	Argenta	Rosemont #32	After, 15' Northeast, 24' x 24' grate in place
146	6-25-87	Argenta	Rosemont #33	Before
147	9-26-88	Argenta	Rosemont #33	Before, 25' Southeast
148	9-26-88	Argenta	Rosemont #33	Before, 3' Southeast
149	9-26-88	Argenta	Rosemont #33	During, 25' Southeast, positioning 16' x 24' grate
150	10-13-88	Argenta	Rosemont #33	After, 25' Southeast, 16' x 24' grate in place



PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
151	10-13-88	Argenta	Rosemont #33	After, 50' Southeast, 16' x 24' grate in place
152	9-3-87	Argenta	SE Section 21 #34	Before
153	9-19-88	Argenta	SE Section 21 #34	Before, 30' South
154	9-19-88	Argenta	SE Section 21 #34	During, 10' North, removing timbers
155	9-19-88	Argenta	SE Section 21 #34	During, 30' South, placing fill
156	9-19-88	Argenta	SE Section 21 #34	After, 10' North
157	6-87	Argenta	Silver Rule #35	Before, 10' North
158	9-20-88	Argenta	Silver Rule #35	During, preparing to haul concrete to site with F250 pickup
159	9-20-88	Argenta	Silver Rule #35	During, preparing to haul concrete and 10'x 10' grate to site with F250 pickup
160	9-20-88	Argenta	Silver Rule #35	After, 10' North, 10' x 10' grate in place
161	7-1-87	Argenta	Starlight #36	Before
162	7-1-87	Argenta	Starlight #37	Before
163	6-89	Argenta	Starlight #36, #37	After
164	6-89	Argenta	Starlight #36, #37	After seeding
165	6-89	Argenta	Stinson #40	After
166	6-16-87	Argenta	Stinson #41	Before
167	9-21-88	Argenta	Stinson #41	Before, 25' East
168	9-21-88	Argenta	Stinson #41	During, 25' East
169	9-21-88	Argenta	Stinson #41	During, 10' South, positioning CMP in opening
170	9-21-88	Argenta	Stinson #41	After, 22' inside CMP looking into mine opening
171	9-21-88	Argenta	Stinson #41	After, 10' South, CMP in place
172	9-21-88	Argenta	Stinson #41	After, 25' East, CMP in place
173	7-1-89	Argenta	Storm King #42	Before
174	9-23-88	Argenta	Storm King #42	Before, 15' North
175	9-23-88	Argenta	Storm King #42	During, 15' North, positioning 16'x 24' grate with 225 trackhoe
176	9-23-88	Argenta	Storm King #42	After, 15' North, 16' x 24' grate in place
177	9-23-88	Argenta	Storm King #42	After, 30' North, 16' x 24' grate in place
178	7-1-87	Argenta	SW Section 8 #43	Before
179	9-26-88	Argenta	SW Section 8 #43	Before, 40' North
180	9-26-88	Argenta	SW Section 8 #43	Before, at North edge of shaft
181	6-89	Argenta	SW Section 8 #43	After
182	6-25-89	Argenta	White Lime #47	Before
183	9-28-88	Argenta	White Lime #47	Before, 12' North
184	9-28-88	Argenta	White Lime #47	During, 12' North, placing fill with 225 trackhoe
185	9-28-88	Argenta	White Lime #47	After, 12' North
186	6-17-87	Baldy Mountain	Baldy 4 #1	Before
187	10-4-88	Baldy Mountain	Baldy 4 #1	Before, 30' East
188	10-4-88	Baldy Mountain	Baldy 4 #1	During, 25' East, preparing to install CMP
189	10-4-88	Baldy Mountain	Baldy 4 #1	After, 30' East
190	6-18-87	Baldy Mountain	Cable #2	Before
191	6-89	Baldy Mountain	Cable #2	During
192	6-89	Baldy Mountain	Cable #2	After
193	10-2-87	Baldy Mountain	Dillon #3	Before
194	10-3-88	Baldy Mountain	Dillon #3	Before, 6' Southwest
195	10-3-88	Baldy Mountain	Dillon #3	Before, 12' Southwest
196	10-3-88	Baldy Mountain	Dillon #3	During, 12' Southwest, digging out entry





PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
197	10-4-88	Baldy Mountain	Dillon #4	Before
198	10-2-87	Baldy Mountain	Dillon #4	Before
199	10-3-88	Baldy Mountain	Dillon #4	Before, 15' Northeast
200	10-3-88	Baldy Mountain	Dillon #4	Before, 30' Northeast
201	10-3-88	Baldy Mountain	Dillon #4	During, 30' Northeast, digging out entry
202	10-3-88	Baldy Mountain	Dillon #4	During, 30' Northeast, drain pipe installed, preparing to install CMP
203	10-4-88	Baldy Mountain	Dillon #4	After, 30' Northeast
204	6-19-87	Baldy Mountain	Dillon #5	Before
205	10-3-88	Baldy Mountain	Dillon #5	Before, 15' East
206	10-3-88	Baldy Mountain	Dillon #5	During, 15' East, entry dug out
207	10-3-88	Baldy Mountain	Dillon #5	During, 25' East, placing fill around CMP
208	10-3-88	Baldy Mountain	Dillon #5	After, 25' East
209	10-4-88	Baldy Mountain	Dillon #6	Before, 15' East
210	10-4-88	Baldy Mountain	Dillon #6	During, 15' East, placing fill in opening with 225 trac
211	10-4-88	Baldy Mountain	Dillon #6	After, 15' East
212	6-18-87	Baldy Mountain	Driscoll Creek #7	Before
213	10-6-88	Baldy Mountain	Driscoll Creek #7	Before, 25' in front of opening
214	10-6-88	Baldy Mountain	Driscoll Creek #7	During, 25' in front of opening, placing fill with 225 trackhoe
215	10-6-88	Baldy Mountain	Driscoll Creek #7	During, 25' in front of opening, pushing fill into portal with 225 trackhoe
216	10-6-88	Baldy Mountain	Driscoll Creek #7	After, 25' in front of opening
217	6-18-87	Baldy Mountain	Driscoll Creek #8	Before, 50' in front of opening
218	10-6-88	Baldy Mountain	Driscoll Creek #8	Before, 50' in front of opening
219	10-6-88	Baldy Mountain	Driscoll Creek #8	During, 50' in front of opening, placing fill
220	10-6-88	Baldy Mountain	Driscoll Creek #8	After, 50' in front of opening
221	6-19-87	Baldy Mountain	Durham Bull #9	Before
222	10-5-88	Baldy Mountain	Durham Bull #9	Before, 30' in front of opening
223	10-5-88	Baldy Mountain	Durham Bull #9	During, 30' in front of opening, preparing entry for CMP
224	10-5-88	Baldy Mountain	Durham Bull #9	After, 30' in front of opening
225	6-17-87	Baldy Mountain	Grizzly Bear #10	Before
226	10-6-88	Baldy Mountain	Grizzly Bear #10	Before, 15' East
227	10-6-88	Baldy Mountain	Grizzly Bear #10	Before, 6' East
228	10-6-88	Baldy Mountain	Grizzly Bear #10	During, 15' East, positioning grate and welding on legs
229	10-6-88	Baldy Mountain	Grizzly Bear #10	After, 15' East, 10' x 10' grate in place
230	10-6-88	Baldy Mountain	Grizzly Bear #10	After, 25' Southeast, 10' x 10' grate in place
231	6-18-89	Baldy Mountain	Steel Creek #16	Before
232	10-7-88	Baldy Mountain	Steel Creek #16	Before, 10' in front of opening
233	10-7-88	Baldy Mountain	Steel Creek #16	Before, 45' in front of opening
234	10-7-88	Baldy Mountain	Steel Creek #16	During, 10' in front of opening, entry dug out
235	10-7-88	Baldy Mountain	Steel Creek #16	After, 10' in front of opening
236	10-7-88	Baldy Mountain	Steel Creek #16	After, 45' in front of opening
237	6-17-89	Baldy Mountain	West Fork #17	Before
238	10-4-88	Baldy Mountain	West Fork #17	Before, 15' East
239	10-4-88	Baldy Mountain	West Fork #17	During, 15' East, clearing portal entry
240	10-4-88	Baldy Mountain	West Fork #17	After, 15' East
241	10-4-88	Baldy Mountain	West Fork #17	After, 30' East
242	9-1-87	Baldy Mountain	Wild Bat #18	Before
243	10-4-88	Baldy Mountain	Wild Bat #18	Before, 15' Southwest



PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
244	10-4-88	Baldy Mountain	Wild Bat #18	Before, 6' Southwest
245	10-4-88	Baldy Mountain	Wild Bat #18	During, 15' Southwest, placing fill with 225 trackhoe
246	10-4-88	Baldy Mountain	Wild Bat #18	After, 15' Southwest
247	10-4-88	Baldy Mountain	Wild Bat #19	Before, 20' South
248	10-4-88	Baldy Mountain	Wild Bat #19	During, 20' South, removing timbers
249	10-4-88	Baldy Mountain	Wild Bat #19	After, 20' South
250	10-7-88	Baldy Mountain	Polaris	225 Trackhoe, weed control/fire safety, 300 gallon water pumper
251	10-7-88	Baldy Mountain	Polaris	Weed control, washing 225 trackhoe
252	5-26-87	Bannack	Bannack State Park (C)	Before
253	6-89	Bannack	Bannack State Park (C)	After
254	5-26-87	Bannack	Bannack State Park (C-1)	Before
255	6-89	Bannack	Bannack State Park (C-1)	After
256	6-89	Bannack	Bannack State Park (C-2)	After
257	6-89	Bannack	Bannack State Park (C-3)	After
258	5-28-87	Bannack	Bon Accord (F)	Before
259	6-89	Bannack	Bon Accord (F)	During
260	6-89	Bannack	Bon Accord (F)	After, seeding
261	5-28-87	Bannack	Box X (H)	Before
262	6-89	Bannack	Box X (H)	During
263	6-89	Bannack	Box X (H)	During
264	6-89	Bannack	Box X (H)	During
265	5-29-87	Bannack	Excelsior (I)	Before
266	5-29-87	Bannack	Excelsior (I)	Before
267	6-89	Bannack	Excelsior (I)	After, painting grate
268	6-89	Bannack	Excelsior (I)	After, installed grate
269	5-29-87	Bannack	Excelsior (J)	Before
270	6-89	Bannack	Excelsior (J)	During, installation
271	6-89	Bannack	Excelsior (J)	After, installed cable net
272	5-29-87	Bannack	Excelsior (K)	Before
273	6-89	Bannack	Excelsior (K)	After, culvert installed
274	5-29-87	Bannack	French (L)	Before
275	6-89	Bannack	French (L)	After
276	5-29-87	Bannack	French (M)	Before
277	6-89	Bannack	French (M)	After
278	5-29-87	Bannack	Gold Leaf (O)	Before
279	5-29-87	Bannack	Gold Leaf (P)	Before
280	6-89	Bannack	Gold Leaf (O & P)	After
281	6-89	Bannack	Gold Leaf (O & P)	After
282	6-89	Bannack	Golden Ledge (Q)	During
283	5-27-87	Bannack	Hendricks (R)	Before
284	6-89	Bannack	Hendricks (R)	During
285	6-89	Bannack	Hendricks (R)	After
286	5-27-87	Bannack	Hendricks (R-1)	Before
287	6-89	Bannack	Hendricks (R-1)	After
288	5-27-87	Bannack	Hendricks (S)	Before
289	5-27-87	Bannack	Hendricks (T)	Before
290	5-27-87	Bannack	Hendricks	Before
291	6-89	Bannack	Hendricks (S & T)	After





PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
292	5-27-87	Bannack	Hendricks (U)	Before
293	6-89	Bannack	Hendricks (U)	After
294	5-27-87	Bannack	Hendricks (V)	Before
295	6-89	Bannack	Hendricks (V)	After
296	5-27-87	Bannack	Hendricks (W)	Before
297	6-89	Bannack	Hendricks (W)	After
298	6-89	Bannack	Hendricks (X)	After
299	5-27-87	Bannack	Hendricks (Y)	Before
300	6-89	Bannack	Hendricks (Y)	After
301	5-27-87	Bannack	SW Section 5 (LL)	Before
302	6-89	Bannack	SW Section 5 (LL)	During
303	6-89	Bannack	SW Section 5 (SS)	After
304	5-29-87	Bannack	Wadam (MM)	Before
305	5-29-87	Bannack	Wadam (NN)	Before
306	5-29-87	Bannack	Wadam (OO)	Before
307	6-89	Bannack	Wadam (MM, NN, OO)	During
308	6-89	Bannack	Wadam (MM, NN, OO)	After
309	6-89	Bannack	Wadam (MM, NN, OO)	After
310	5-29-87	Bannack	Wallace (RR)	Before
311	6-89	Bannack	Wallace (RR)	After
312	8-89	Blacktail/Ruby	Ground Hog #11	Before
313	8-89	Blacktail/Ruby	Ground Hog #11	Before
314	8-89	Blacktail/Ruby	Ground Hog #11	During
315	8-89	Blacktail/Ruby	Ground Hog #11	During
316	8-89	Blacktail/Ruby	Ground Hog #11	During
317	8-89	Blacktail/Ruby	Ground Hog #11	After
318	8-88	Blacktail/Ruby	Ground Hog #12	Before
319	8-88	Blacktail/Ruby	Ground Hog #12	During
320	8-88	Blacktail/Ruby	Ground Hog #12	After
321	8-88	Blacktail/Ruby	Ground Hog #12	After
322	7-1-87	Blacktail/Ruby	Nevada #1	Before
323	10-88	Blacktail/Ruby	Nevada #1	Before
324	10-88	Blacktail/Ruby	Nevada #1	During
325	10-88	Blacktail/Ruby	Nevada #2	Before
326	7-1-87	Blacktail/Ruby	Nevada #2	Before
327	10-1-87	Blacktail/Ruby	NW Section 23 #3	Before
328	10-1-87	Blacktail/Ruby	Smith-Dillon #4	Before
329	10-1-87	Blacktail/Ruby	Smith-Dillon #5	Before
330	10-1-87	Blacktail/Ruby	Smith-Dillon #6	Before
331	10-88	Blacktail/Ruby	Smith-Dillon #6	Before
332	10-1-87	Blacktail/Ruby	Smith-Dillon #7	Before
333	10-88	Blacktail/Ruby	Smith-Dillon #7	Before
334	10-88	Blacktail/Ruby	Smith-Dillon #7	Before
335	10-88	Blacktail/Ruby	Smith-Dillon #7	During
336	7-22-87	Blacktail/Ruby	Stone Creek #8	Before
337	1-89	Blacktail/Ruby	Stone Creek #8	After
338	1-89	Blacktail/Ruby	Stone Creek #9	Before
339	1-89	Blacktail/Ruby	Stone Creek #9	During
340	1-89	Blacktail/Ruby	Stone Creek #9	After



PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
341	1-89	Blacktail/Ruby	Stone Creek #10	During
342	1-89	Blacktail/Ruby	Stone Creek #10	After
343	1-89	Blacktail/Ruby	Stone Creek #10	After
344	1-89	Blacktail/Ruby	Stone Creek #10	After
345	6-3-87	Blue Wing	Arctic #1	Before
346	10-21-88	Blue Wing	Arctic #1	Before, 27' Southeast
347	10-21-88	Blue Wing	Arctic #1	Before, 4' Southeast
348	10-21-88	Blue Wing	Arctic #1	During, mixing concrete by hand
349	10-21-88	Blue Wing	Arctic #1	After, 27' Southeast, 16' x 32' grate in place
350	6-2-87	Blue Wing	Bob Ingersoll #2	Before
351	11-10-88	Blue Wing	Bob Ingersoll #2	Before, 15' in front of opening
352	11-10-88	Blue Wing	Bob Ingersoll #2	During, 15' in front of opening
353	11-10-88	Blue Wing	Bob Ingersoll #2	After, 15' in front of opening
354	6-2-87	Blue Wing	Bob Ingersoll #3	Before
355	6-89	Blue Wing	Bob Ingersoll #3	During, constructing additional panel
356	6-89	Blue Wing	Bob Ingersoll #3	During, road built
357	6-89	Blue Wing	Bob Ingersoll #3	After, grate complete
358	6-2-87	Blue Wing	Bob Ingersoll #4	Before
359	6-89	Blue Wing	Bob Ingersoll #4	During, excavating for grate
360	6-89	Blue Wing	Bob Ingersoll #4	During, trackhoe maneuvering
361	6-89	Blue Wing	Bob Ingersoll #4	After, grate complete
362	6-89	Blue Wing	Cottontail #4	During, installing culvert
363	6-89	Blue Wing	Cottontail #4	During, installing culvert
364	6-89	Blue Wing	Cottontail #4	After, complete
365	11-3-88	Blue Wing	Cottontail #5	Before, 40' North
366	11-3-88	Blue Wing	Cottontail #5	Before, 15' North
367	11-3-88	Blue Wing	Cottontail #5	Before, 5' North
368	11-3-88	Blue Wing	Cottontail #5	During, 15' North, preparing to place CMP
369	11-3-88	Blue Wing	Cottontail #5	During, 15' North, positioning CMP
370	11-3-88	Blue Wing	Cottontail #5	After, 15' North
371	11-3-88	Blue Wing	Cottontail #5	After, 40' North
372	6-89	Blue Wing	Cottontail #5	After, 30' North
373	6-89	Blue Wing	Cottontail #6	During, installing corners
374	6-89	Blue Wing	Cottontail #6	After, complete fence
375	6-89	Blue Wing	Cottontail #7	After, complete fence
376	6-89	Blue Wing	Cottontail #7A	During, welding legs on steel grate
377	6-89	Blue Wing	Cottontail #7A	During, placing grate over shaft
378	6-89	Blue Wing	Cottontail #7A	After, complete grate
379	6-3-87	Blue Wing	Francis H #8	Before
380	10-18-88	Blue Wing	Francis H #8	Before, 10' South
381	10-18-88	Blue Wing	Francis H #8	During, 10' South, placing fill with 225 trackhoe
382	10-18-88	Blue Wing	Francis H #8	After, 10' South
383	10-18-88	Blue Wing	Francis H #8	After, 10' South, seeding site
384	10-18-88	Blue Wing	Francis H #9	Before, 3' East
385	10-18-88	Blue Wing	Francis H #10	Before, 3' West
386	10-18-88	Blue Wing	Francis H #9	During, 3' East, placing fill
387	10-18-88	Blue Wing	Francis H #9, #10	After, 10' West of #9 and 25' West of #10
388	6-1-87	Blue Wing	Hangmans Gulch #11	Before
389	10-19-88	Blue Wing	Hangmans Gulch #11	Before, 10' South





PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
390	10-19-88	Blue Wing	Hangmans Gulch #11	During, 10' South, removing timbers
391	10-19-88	Blue Wing	Hangmans Gulch #11	After, 10' South
392	6-1-87	Blue Wing	Hangmans Gulch #12	Before
393	10-19-88	Blue Wing	Hangmans Gulch #12	Before, 20' North
394	10-19-88	Blue Wing	Hangmans Gulch #12	During, 20' North, placing fill with 225 trackhoe
395	10-19-88	Blue Wing	Hangmans Gulch #12	After, 20' North
396	10-19-88	Blue Wing	Hangmans Gulch #12	After, 40' North
397	10-19-88	Blue Wing	Hangmans Gulch #13	Before
398	10-19-88	Blue Wing	Hangmans Gulch #13	Before, 25' West
399	10-19-88	Blue Wing	Hangmans Gulch #13	Before, 10' South
400	10-19-88	Blue Wing	Hangmans Gulch #13	During, 25' West, placing fill with 225 trackhoe
401	10-19-88	Blue Wing	Hangmans Gulch #13	After, 25' West
402	10-19-88	Blue Wing	Hangmans Gulch #13	After, 10' South
403	10-19-88	Blue Wing	Hangmans Gulch #13	After, seeding tracks leading to site
404	10-19-88	Blue Wing	Hangmans Gulch #14	Before, 20' North
405	10-19-88	Blue Wing	Hangmans Gulch #14	During, 20' North, placing fill with 225 trackhoe
406	10-19-88	Blue Wing	Hangmans Gulch #14	After, 20' North
407	10-19-88	Blue Wing	Hangmans Gulch #14	After, 40' North
408	6-5-87	Blue Wing	Huron #15	Before
409	11-3-88	Blue Wing	Huron #15	Before, 15' East
410	6-5-87	Blue Wing	Huron #16	Before
411	11-3-88	Blue Wing	Huron #16	Before, at East edge of opening
412	11-3-88	Blue Wing	Huron #15, #16	Before, 30' East
413	11-3-88	Blue Wing	Huron #15, #16	During, 45' Northeast, placing fill with 225 trackhoe
414	11-3-88	Blue Wing	Huron #15, #16	After, 45' Northeast
415	11-3-88	Blue Wing	Huron #15, #16	After, 30' East
416	6-5-87	Blue Wing	Huron #18	Before
417	11-1-88	Blue Wing	Huron #18	Before, 6' Southwest
418	11-1-88	Blue Wing	Huron #18	Before, 18' Southwest
419	11-1-88	Blue Wing	Huron #18	During, 18' Southwest, drilling hole for rock bolt
420	11-1-88	Blue Wing	Huron #18	After, 18' Southwest, 10' x 10' grate in place
421	6-89	Blue Wing	Huron #18A	During, installing corner and line
422	6-89	Blue Wing	Huron #18A	After, completed fence
423	11-1-88	Blue Wing	Huron #21	Before, 4' South
424	11-1-88	Blue Wing	Huron #21	Before, 20' South
425	11-1-88	Blue Wing	Huron #21	During, 20' South, site leveled for grate
426	11-1-88	Blue Wing	Huron #21	After, 20' South, 10' x 10' grate in place
427	6-89	Blue Wing	Huron #21A, #29	After, complete
428	6-5-87	Blue Wing	Huron #23	Before
429	11-1-88	Blue Wing	Huron #23	Before, 18' Southwest
430	11-1-88	Blue Wing	Huron #23	During, 18' Southwest, site leveled for grate
431	11-1-88	Blue Wing	Huron #23	After, 18' Southwest, 16' x 16' grate in place
432	6-89	Blue Wing	Huron #23A	After, complete with one sign
433	6-89	Blue Wing	Huron #23B	During, installing corner posts
434	6-89	Blue Wing	Huron #23B	After, complete
435	6-5-87	Blue Wing	Huron #26	Before
436	10-27-88	Blue Wing	Huron #26	Before, 15' East
437	10-27-88	Blue Wing	Huron #26	During, 15' East, leveling site
438	11-3-88	Blue Wing	Huron #26	After, 15' East, 16' x 16' grate in place
439	6-89	Blue Wing	Huron #26	After, complete



PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
440	6-5-87	Blue Wing	Huron #27	Before
441	10-28-88	Blue Wing	Huron #27	Before, 25' in front of opening
442	10-28-88	Blue Wing	Huron #27	During, 25' in front of opening, preparing holes for rock bolt
443	6-89	Blue Wing	Huron #27	After, 25' in front of opening
444	6-5-87	Blue Wing	Huron #29	Before
445	10-28-88	Blue Wing	Huron #29	Before, 25' in front of opening
446	10-28-88	Blue Wing	Huron #29	During, 25' in front of opening, drilling holes with air drill
447	6-89	Blue Wing	Huron #29	After, 25' in front of opening
448	6-89	Blue Wing	Huron #29	After, 25' in front of opening
449	6-5-87	Blue Wing	Huron #30	Before
450	10-27-88	Blue Wing	Huron #30	Before, 6' North of opening
451	10-27-88	Blue Wing	Huron #30	During, 6' North, leveling site with 225 trackhoe
452	11-3-88	Blue Wing	Huron #30	After, 6' North, 16' x 16' grate in place
453	11-3-88	Blue Wing	Huron #30	After, 25' North, 16' x 16' grate in place
454	6-89	Blue Wing	Huron #30A	After
455	6-5-87	Blue Wing	Huron #31	Before
456	10-27-88	Blue Wing	Huron #31	Before, 15' West
457	10-27-88	Blue Wing	Huron #31	Before, 6' West
458	10-27-88	Blue Wing	Huron #31	During, 50' West, removing head frame
459	11-3-88	Blue Wing	Huron #31	After, 15' West, 24' x 24' grate in place
460	11-3-88	Blue Wing	Huron #31	After, 50' West of opening, 24' x 24' grate in place
461	6-5-87	Blue Wing	Huron #32	Before
462	10-27-88	Blue Wing	Huron #32	Before, 10' North of opening
463	11-3-88	Blue Wing	Huron #32	After, 15' North, 10' x 10' grate in place
464	6-5-87	Blue Wing	Huron #33	Before
465	10-27-88	Blue Wing	Huron #33	Before, 12' East
466	10-27-88	Blue Wing	Huron #33	During, 12' East, drilling holes for rock bolts
467	6-89	Blue Wing	Huron #33	During, preparing to place clips
468	6-89	Blue Wing	Huron #33	During, placing clips
469	6-89	Blue Wing	Huron #33	After, 12' East
470	6-5-87	Blue Wing	Huron #34	Before
471	10-31-88	Blue Wing	Huron #34	Before, 25' Northeast
472	10-31-88	Blue Wing	Huron #34	During, 25' Northeast, hand digging pedestal holes for 6' x 6' grate
473	11-3-88	Blue Wing	Huron #34	After, 25' Northeast, 10' x 10' and 6' x 6' grate in place
474	6-89	Blue Wing	Huron #34A	After
475	6-89	Blue Wing	Huron #34B	After
476	6-89	Blue Wing	Huron #39	After
477	6-5-87	Blue Wing	Huron #40	Before
478	11-1-88	Blue Wing	Huron #40	Before, 6' South
479	11-1-88	Blue Wing	Huron #40	Before, 20' South
480	11-1-88	Blue Wing	Huron #40	During, 20' South, drilling holes for rock bolts
481	11-1-88	Blue Wing	Huron #40	After, 20' South, 10' x 10' grate in place
482	6-5-87	Blue Wing	Huron #41	Before
483	11-1-88	Blue Wing	Huron #41	Before, 20 East
484	6-5-87	Blue Wing	Huron #42	Before
485	11-1-88	Blue Wing	Huron #42	Before, 20' East
486	11-1-88	Blue Wing	Huron #41, #42	Before, 30' East





PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
487	11-1-88	Blue Wing	Huron #42	During, 50' North, placing fill with 225 trackhoe
488	6-5-87	Blue Wing	Huron #41	After, 20' East
489	6-5-87	Blue Wing	Huron #41, #42	After, 30' East
490	6-5-87	Blue Wing	Huron #42	After, 20' East
491	6-5-87	Blue Wing	Huron #41	After
492	11-3-88	Blue Wing	Iron Mask #43	Before, 15' South
493	11-3-88	Blue Wing	Iron Mask #43	Before, 75' Southwest
494	11-3-88	Blue Wing	Iron Mask #43	During, 15' South, preparing entry for CMP
495	11-3-88	Blue Wing	Iron Mask #43	After, 15' South
496	11-3-88	Blue Wing	Iron Mask #43	After, 75' Southwest
497	6-4-87	Blue Wing	Kent #44	Before
498	11-3-88	Blue Wing	Kent #44	Before, 25' in front of opening
499	11-3-88	Blue Wing	Kent #44	During, 25' in front of opening, placing fill with 225 trackhoe
500	11-3-88	Blue Wing	Kent #44	After, 25' in front of opening
501	6-4-87	Blue Wing	Kent #45	Before
502	11-7-88	Blue Wing	Kent #45	Before, 20' Northeast
503	11-7-88	Blue Wing	Kent #45	During, Southwest end of 16' x 16' grate
504	11-9-88	Blue Wing	Kent #45	After, 20' Northeast of 16' x 16' grate with 6' x 8' addition
505	6-4-87	Blue Wing	Kent #46	Before
506	11-8-88	Blue Wing	Kent #46	Before, 30' in front of opening
507	11-8-88	Blue Wing	Kent #46	During, 30' in front of opening, drilling holes for rock bolts
508	6-89	Blue Wing	Kent #46	During, 30' in front
509	6-89	Blue Wing	Kent #46	After, 30' in front
510	6-4-87	Blue Wing	Kent #47	Before
511	11-18-88	Blue Wing	Kent #47	Before, 20' East
512	11-18-88	Blue Wing	Kent #47	During, 20' East, placing fill with 225 trackhoe
513	11-18-88	Blue Wing	Kent #47	After, 20' East
514	6-89	Blue Wing	Kent #47	After, 20' East of West end
515	6-4-87	Blue Wing	Kent #48	Before, 50' in front of opening
516	11-5-88	Blue Wing	Kent #48	During, 25' in front of opening
517	6-89	Blue Wing	Kent #48	After
518	6-89	Blue Wing	Kent #49	Before
520	11-9-88	Blue Wing	Kent #49	Before, 25' in front of opening
521	11-9-88	Blue Wing	Kent #49	During, 25' in front of opening, placing CMP
522	11-9-88	Blue Wing	Kent #49	After, 25' in front of opening
523	6-4-87	Blue Wing	Kent #50	Before
524	11-4-88	Blue Wing	Kent #50	Before, 10' Southwest
525	11-4-88	Blue Wing	Kent #50	During, 10' Southwest, placing fill with 225 trackhoe
526	11-4-88	Blue Wing	Kent #50	After, 10' Southwest
527	6-4-87	Blue Wing	Kent #51	Before
528	11-4-88	Blue Wing	Kent #51	Before, 30' Southwest
529	11-4-88	Blue Wing	Kent #51	During, 30' Southwest, placing grate
530	11-4-88	Blue Wing	Kent #50, #51	After, 30' Southwest of #51, 16' x 16' grate in place, opening #50 in background
531	6-2-87	Blue Wing	Log Cabin #52	Before
532	11-10-88	Blue Wing	Log Cabin #52	Before, 35' East
533	11-10-88	Blue Wing	Log Cabin #52	During, 35' East, putting lock on hatch





PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
534	11-10-88	Blue Wing	Log Cabin #52	After, 35' East
535	6-2-87	Blue Wing	Nettie #53	Before
536	1-89	Blue Wing	Nettie #53	After, 35' North, 24' x 24' grate in place
537	1-89	Blue Wing	Nettie #54	Before
538	1-89	Blue Wing	Nettie #54	Before
539	1-89	Blue Wing	Nettie #54	Before
540	1-89	Blue Wing	Nettie #54	After
541	6-3-87	Blue Wing	NW Section 28 #56	Before
542	11-88	Blue Wing	NW Section 28 #56	Before
543	11-88	Blue Wing	NW Section 28 #56	Before
544	11-88	Blue Wing	NW Section 28 #56	Before
545	11-88	Blue Wing	NW Section 28 #56	During
546	11-88	Blue Wing	NW Section 28 #56	During
547	11-88	Blue Wing	NW Section 28 #56	After
548	11-88	Blue Wing	NW Section 28 #57	Before
549	11-88	Blue Wing	NW Section 28 #57	Before
550	11-88	Blue Wing	NW Section 28 #57	After
551	11-88	Blue Wing	NW Section 28 #57	After
552	6-89	Blue Wing	New Departure/Blue Dot #1	Before, 50' East of opening
553	6-89	Blue Wing	New Departure/Blue Dot #1	During, 50' West of opening
554	6-89	Blue Wing	New Departure/Blue Dot #1	After, 50' West of opening
555	6-89	Blue Wing	New Departure/ Manganese Incline #2	During, 30' Southeast of opening
556	6-89	Blue Wing	New Departure/ Manganese Incline #2	During, 30' Southeast of opening
557	6-89	Blue Wing	New Departure/ Manganese Incline #2	After, 15' East of opening
558	6-89	Blue Wing	New Departure/ Manganese Shaft #3	During, 30' Northwest of opening
559	6-89	Blue Wing	New Departure/ Manganese Shaft #3	After, 10' East of opening
560	6-89	Blue Wing	New Departure/ Hickey Incline #4	After, 30' South of opening
561	6-89	Blue Wing	New Departure/Rainbow #5	During, 30' East of opening
562	6-89	Blue Wing	New Departure/Rainbow #5	After, 30' East of opening
563	6-89	Blue Wing	New Departure/ Quien Sabe #7	During, 50' South of opening
564	6-89	Blue Wing	New Departure/ Quien Sabe #7	After, 30' Southwest of opening
565	6-89	Blue Wing	New Departure/ Quien Sabe #7	After, 30' Southwest of opening
566	6-89	Blue Wing	New Departure/ Quien Sabe #8	During, 50' South of opening
567	6-89	Blue Wing	New Departure/ Quien Sabe #8	After, 50' South of opening
568	6-89	Blue Wing	New Departure/Old Powder Mag. #9	Before, 10' North of opening
569	6-89	Blue Wing	New Departure/Old Powder Mag. #9	After, 10' North of opening
570	6-89	Blue Wing	New Departure/ Rusty Tin #11	Before, 10' North of opening



PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
571	6-89	Blue Wing	New Departure/ Rusty Tin #11	After, 10' North of opening
572	6-89	Blue Wing	New Departure/ No Name #12	Before, 20' North of opening
573	6-89	Blue Wing	New Departure/ RR Tracks #13	Before, 15' North of opening
574	6-89	Blue Wing	New Departure/ Tree Hole #14	Before, 10' South of opening
575	6-89	Blue Wing	New Departure/ Tree Hole #14	During, 30' South of opening
576	6-89	Blue Wing	New Departure/ Tree Hole #14	After, 30' South of opening
577	6-89	Blue Wing	New Departure/No Name #15	Before, 15' North of opening
578	6-89	Blue Wing	New Departure/ Rusty Tin #16	Before, 30' North of opening
579	6-89	Blue Wing	New Departure/ Rusty Tin #16	During, 30' North of opening
580	6-89	Blue Wing	New Departure/ Rusty Tin #16	During, 30' North of opening
581	6-89	Blue Wing	New Departure/ Rusty Tin #16	After, 30' North of opening
582	6-89	Blue Wing	New Departure/ No Name #17	Before, 20' East of opening
583	6-89	Blue Wing	New Departure/ No Name #17	During, 50' East of opening
584	6-89	Blue Wing	New Departure/ No Name #17	After, 20' East of opening
585	6-89	Blue Wing	New Departure/Stinker #18	Before, 15' North of opening
586	6-89	Blue Wing	New Departure/Stinker #18	During, 30' Northeast of opening
587	6-89	Blue Wing	New Departure/Stinker #18	After, 30' Northeast of opening
588	6-89	Blue Wing	New Departure/Stinker #19	Before, 15' North of opening
589	6-89	Blue Wing	New Departure/Stinker #19	During, 60' North of opening
590	6-89	Blue Wing	New Departure/Stinker #19	During, 30' North of opening
591	6-89	Blue Wing	New Departure/Stinker #20	Before, 5' North of opening
592	6-89	Blue Wing	New Departure/Stinker #20	After, 20' North of opening
593	6-89	Blue Wing	New Departure/Coppin #21	Before, 20' West of opening
594	6-89	Blue Wing	New Departure/Coppin #21	During, 20' West of opening
595	6-89	Blue Wing	New Departure/Coppin #21	After, 20' East of opening
596	6-89	Blue Wing	New Departure/ No Name #22	Before, 10' North of opening
597	6-89	Blue Wing	New Departure/ No Name #22	During, 5' South of opening
598	6-89	Blue Wing	New Departure/Lacey's #23	Before, 15' North of opening
599	6-89	Blue Wing	New Departure/ Silver Springs #24	Before, 20' North of opening
600	6-89	Blue Wing	New Departure/ Silver Springs #24	During, 50' South of opening
601	6-89	Blue Wing	New Departure/ Silver Springs #24	After, 30' North of opening
602	6-87	Blue Wing	Old Charter Oak #58	Before, 15' East of opening





PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
603	6-89	Blue Wing	Old Charter Oak #58	After, 15' East of opening
604	6-87	Blue Wing	Old Charter Oak #59	Before, 5' West of opening
605	6-89	Blue Wing	Old Charter Oak #59	During, 15' South of opening
606	6-89	Blue Wing	Old Charter Oak #59, #59A	During, 30' Southeast of opening
607	6-89	Blue Wing	Old Charter Oak #59, #59A	During, 30' Southeast of opening
608	6-87	Blue Wing	Old Charter Oak #60	Before, 15' East of opening
609	6-89	Blue Wing	Old Charter Oak #60	During, 20' East of opening
610	8-83	Blue Wing	Silver Buckle Group	Before, 1/2 mile Southeast
611	8-83	Blue Wing	Silver Buckle #61	Before, 10' South of opening
612	11-88	Blue Wing	Silver Buckle #61	Before, 10' West of opening
613	11-88	Blue Wing	Silver Buckle #61	Before, 30' South of opening
614	11-88	Blue Wing	Silver Buckle #61	During, 15' East of opening
615	11-88	Blue Wing	Silver Buckle #61	After, 5' South of opening
616	11-88	Blue Wing	Silver Buckle #61	After, 20' Southeast of opening
617	8-83	Blue Wing	Silver Buckle #62	Before, 30' South of opening
618	11-88	Blue Wing	Silver Buckle #62	Before, 20' Southeast of opening
619	11-88	Blue Wing	Silver Buckle #62	After, 20' Southeast of opening
620	8-83	Blue Wing	Silver Buckle #63	Before, 3' South of opening
621	11-88	Blue Wing	Silver Buckle #63	Before, 30' South of opening
622	11-88	Blue Wing	Silver Buckle #63	During, 10' Southeast of opening
623	11-88	Blue Wing	Silver Buckle #63	After, 15' South of opening
624	8-83	Blue Wing	Silver Buckle #64	Before, 10' North of opening
625	8-83	Blue Wing	Silver Buckle #64	Before, 40' North of opening
626	11-88	Blue Wing	Silver Buckle #64	During, 50' North of opening
627	11-88	Blue Wing	Silver Buckle #64	During, 30' North of opening
628	11-88	Blue Wing	Silver Buckle #64	During, 30' South of opening
629	11-88	Blue Wing	Silver Buckle #64	During, 40' East of opening
630	11-88	Blue Wing	Silver Buckle #64	During, 50' North of opening
631	11-88	Blue Wing	Silver Buckle #64	After, 20' West of opening
632	11-88	Blue Wing	Silver Buckle #64	After, 20' North of opening
633	11-88	Blue Wing	Silver Buckle #64A	After, 50' South of opening
634	6-87	Blue Wing	Wheal Rose #66	Before, 10' East of opening
635	11-88	Blue Wing	Wheal Rose #66	Before, 5' East of opening
636	11-88	Blue Wing	Wheal Rose #66	Before, 15' East of opening
637	11-88	Blue Wing	Wheal Rose #66	Before, 20' East of opening
638	11-88	Blue Wing	Wheal Rose #66	During, 10' East of opening
639	11-88	Blue Wing	Wheal Rose #66	During, 20' East of opening
640	11-88	Blue Wing	Wheal Rose #66	After, 10' East of opening
641	6-30-87	Clark Canyon	Clark Canyon #1	Before
642	6-30-87	Clark Canyon	Clark Canyon #2	Before
643	6-30-87	Clark Canyon	Clark Canyon #3	Before
644	6-10-87	Ermont	Badger #1	Before
645	9-16-88	Ermont	Badger #1	Before, 20' North
646	9-16-88	Ermont	Badger #1	During, 40' North, lifting 32' x 36' grate with crane
647	9-20-88	Ermont	Badger #1	After, 20' North, 32' x 36' grate in place
648	9-20-88	Ermont	Badger #1	After, 40' North, 32' x 36' grate in place
649	6-10-87	Ermont	East Ermont #2	Before
650	9-16-88	Ermont	East Ermont #2	Before, 10' North



PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
651	9-16-88	Ermont	East Ermont #2	During, 10' North, grate positioned over opening
652	9-20-88	Ermont	East Ermont #2	After, 10' North
653	9-20-88	Ermont	East Ermont #2	After, 40' North
654	6-10-87	Ermont	East Ermont #3	Before
655	9-13-88	Ermont	East Ermont #3	Before, 10' West
656	9-13-88	Ermont	East Ermont #3	During, 25' South, positioning grate
657	9-20-88	Ermont	East Ermont #3	During, 25' South, placing concrete pedestals
658	9-20-88	Ermont	East Ermont #3	After, 25' South
659	6-10-87	Ermont	Ermont 19 #4	Before
660	9-13-88	Ermont	Ermont 19 #4	Before, 10' East
661	9-13-88	Ermont	Ermont 19 #4	During, 10' East, grate positioned over opening
662	9-20-88	Ermont	Ermont 19 #4	During, 10' East, placing concrete pedestals
663	9-20-88	Ermont	Ermont 19 #4	After, 25' East
664	6-10-87	Ermont	Ermont 19 #5	Before
665	9-16-88	Ermont	Ermont 19 #5	Before, 20' West
666	9-20-88	Ermont	Ermont 19 #5	During, 20' West, preparing site for grate
667	9-20-88	Ermont	Ermont 19 #5	During, typical leg support
668	9-20-88	Ermont	Ermont 19 #5	During, 20' West, grate positioned
669	9-20-88	Ermont	Ermont 19 #5	After, 20' West, 16' x 16' grate in place
670	6-10-87	Ermont	Opy #6	Before
671	9-8-88	Ermont	Opy #6	Before, 10' Northeast of shaft
672	9-20-88	Ermont	Opy #6	Before, 10' East of shaft
673	9-20-88	Ermont	Opy #6	During, 10' Northeast of shaft, removing timbers
674	9-20-88	Ermont	Opy #6	During, preparing to place grate with 225 trackhoe
675	9-20-88	Ermont	Opy #6	During, grate positioned over opening
676	9-20-88	Ermont	Opy #6	After, 10' Northeast, 16' x 24' grate in place
677	9-20-88	Ermont	Opy #6	After, 35' Northeast, 16' x 24' grate in place
678	6-10-87	Ermont	South Ermont #7	Before
679	9-8-88	Ermont	South Ermont #7	Before, 20' North of shaft
680	9-8-88	Ermont	South Ermont #7	During, 20' North, leveling site with 225 trackhoe
681	9-8-88	Ermont	South Ermont #7	During, 50' North, leveling site with 225 trackhoe
682	9-20-88	Ermont	South Ermont #7	During, 50' North, placing concrete pedestals
683	9-88	Ermont	South Ermont #7	After, 50' North, 24' x 24' grate in place
684	9-88	Ermont	Ermont Mill #8	Before
685	11-88	Ermont	Ermont Mill #8	Before, 50' South
686	6-89	Ermont	Ermont Mill #8	Before, 40' North
687	6-89	Ermont	Ermont Mill #8	During, 40' North
689	6-89	Ermont	Ermont Mill #8	After, 40' North
690	7-2-87	Polaris	Silver King (G)	Before
691	10-10-88	Polaris	Silver King (G)	Before, 20' in front of opening
692	10-88	Polaris	Silver King (G)	During, 20' in front of opening, entrance prepared for CMP
693	10-88	Polaris	Silver King (G)	After, 20' in front of opening
694	7-2-87	Polaris	Silver King (H)	Before
695	10-11-88	Polaris	Silver King (H)	Before, 20' North
696	10-11-88	Polaris	Silver King (H)	During, 20' North, contractor standing in opening
697	10-11-88	Polaris	Silver King (H)	During, 20' North, entrance prepared for CMP
698	10-11-88	Polaris	Silver King (H)	After, 35' North
699	10-10-88	Polaris	Silver King (HI)	Before, 4' East



PHASE 22 CONSTRUCTION SLIDE LOG (continued)

SLIDE NUMBER	DATE OF SLIDE	MINING DISTRICT	SITE NAME AND NUMBER	SLIDE SEQUENCE, VANTAGE POINT AND CONSTRUCTION OPERATION
700	10-10-88	Polaris	Silver King (HI)	During, 4' East, leveling site
701	10-10-88	Polaris	Silver King (HI)	During, 10' East, site leveled
702	10-11-88	Polaris	Silver King (HI)	After, 25' East, 10' x 10' grate in place
703	7-2-87	Polaris	Silver King (I)	Before
704	10-10-88	Polaris	Silver King (I)	Before, 10' North
705	10-10-88	Polaris	Silver King (I)	During, 10' North, site leveled
706	10-11-88	Polaris	Silver King (I)	After, 10' North, 16' x 16' grate in place
707	10-11-88	Polaris	Silver King (I)	After, 30' North, 16' x 16' grate in place
708	10-88	Polaris	Silver King (I-1)	Before
709	10-88	Polaris	Silver King (I-1)	Before
710	10-88	Polaris	Silver King (I-1)	Before
711	10-88	Polaris	Silver King (I-1)	After
712	10-88	Polaris	Silver King (I-2)	Before
713	10-88	Polaris	Silver King (I-2)	After
714	7-2-87	Polaris	Silver King (J)	Before
715	10-10-88	Polaris	Silver King (J)	Before, at East edge
716	10-88	Polaris	Silver King (J)	During, at East edge, installing CMP
717	10-88	Polaris	Silver King (J)	After, 10' East







